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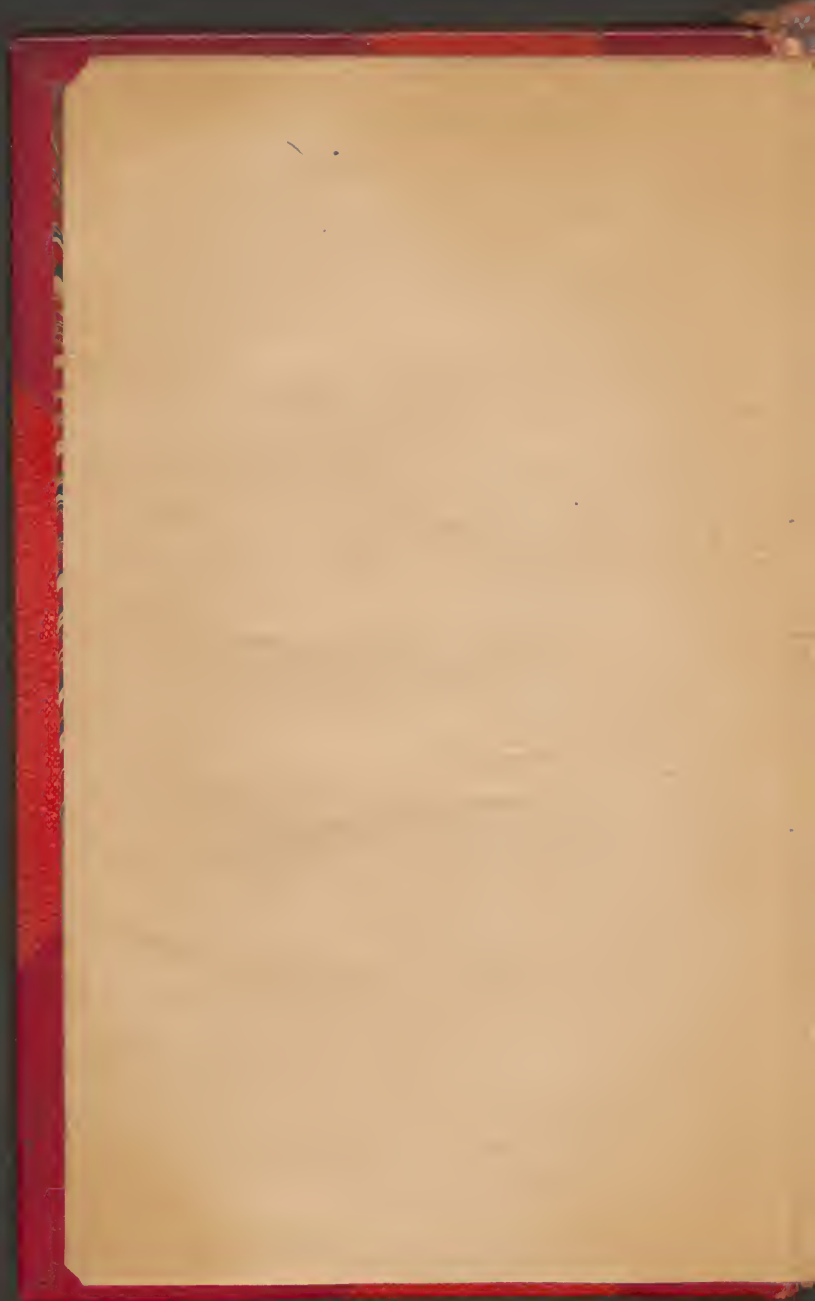
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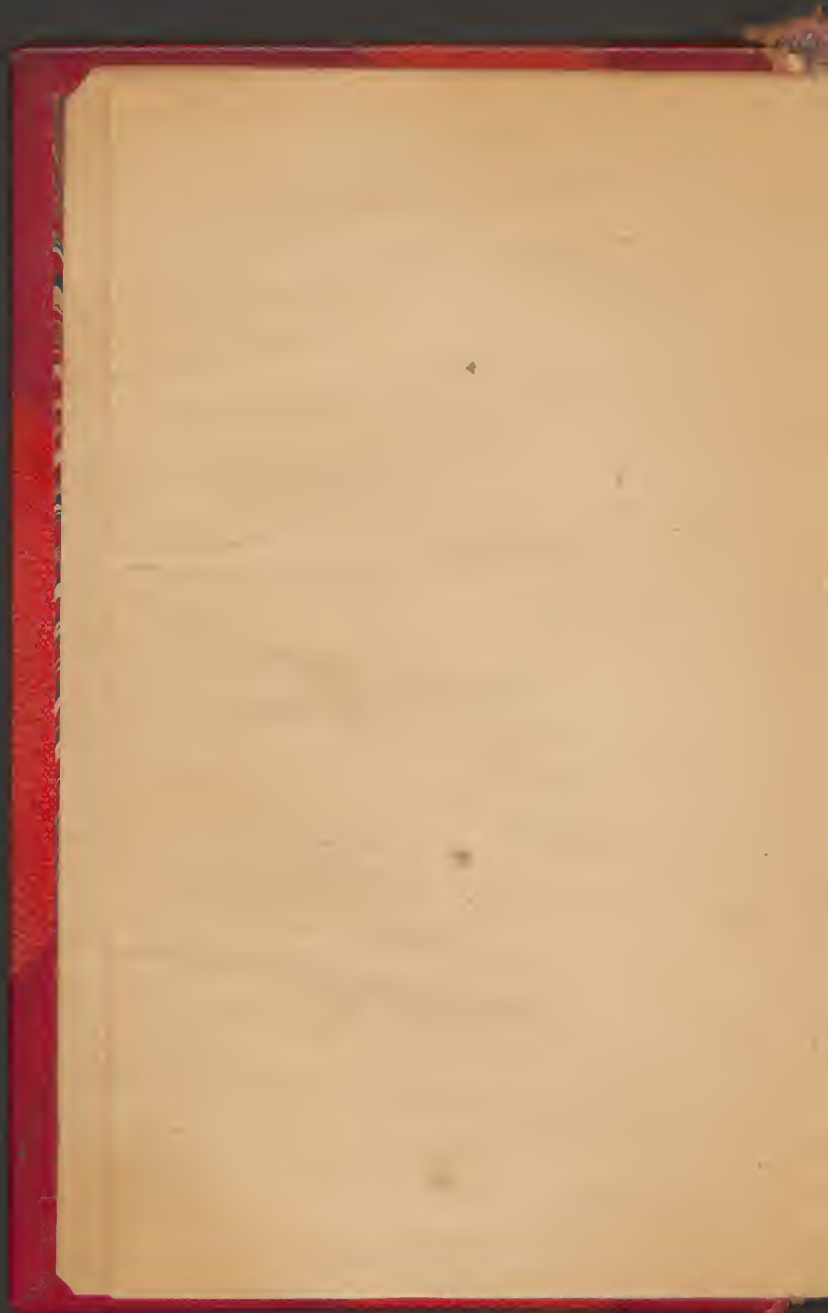
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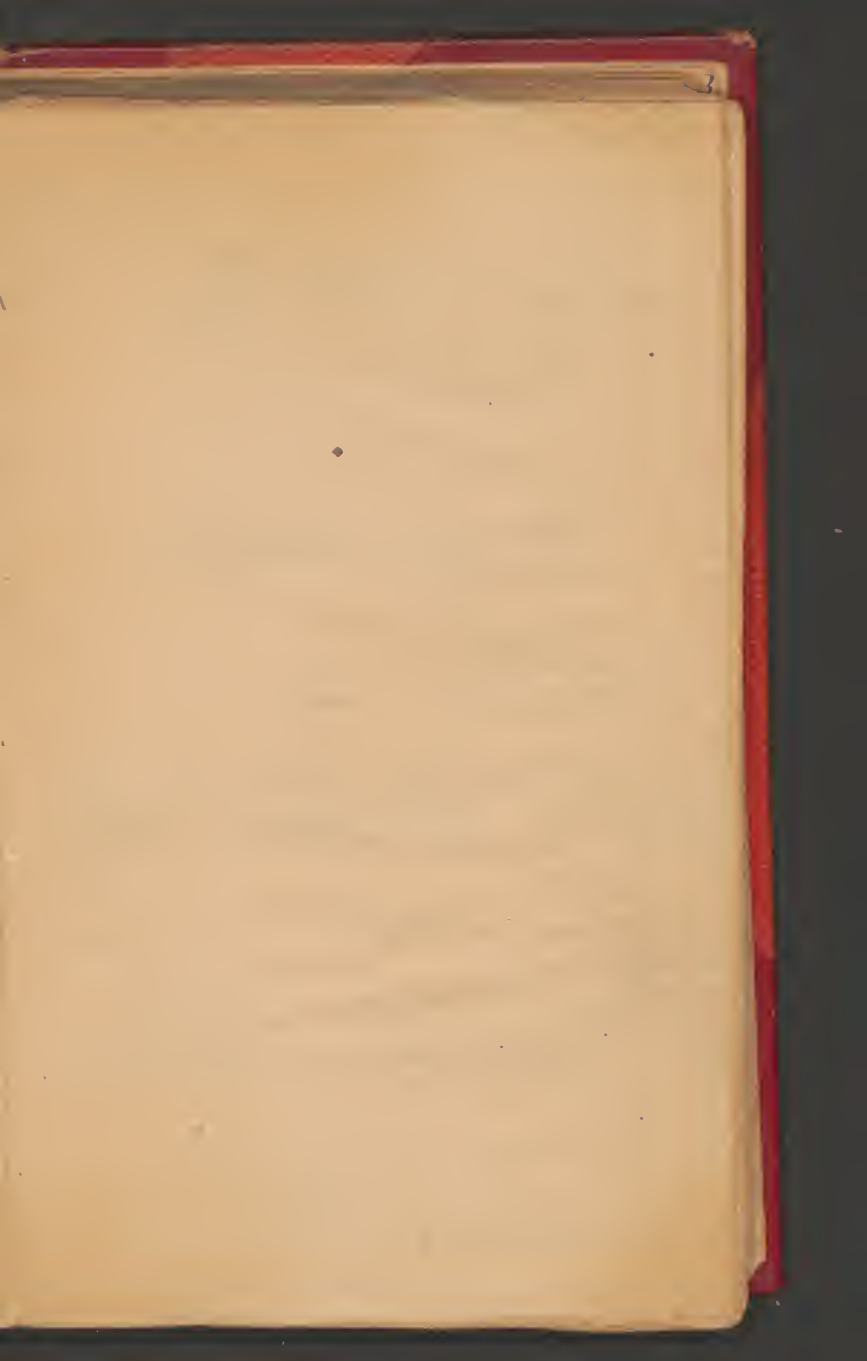


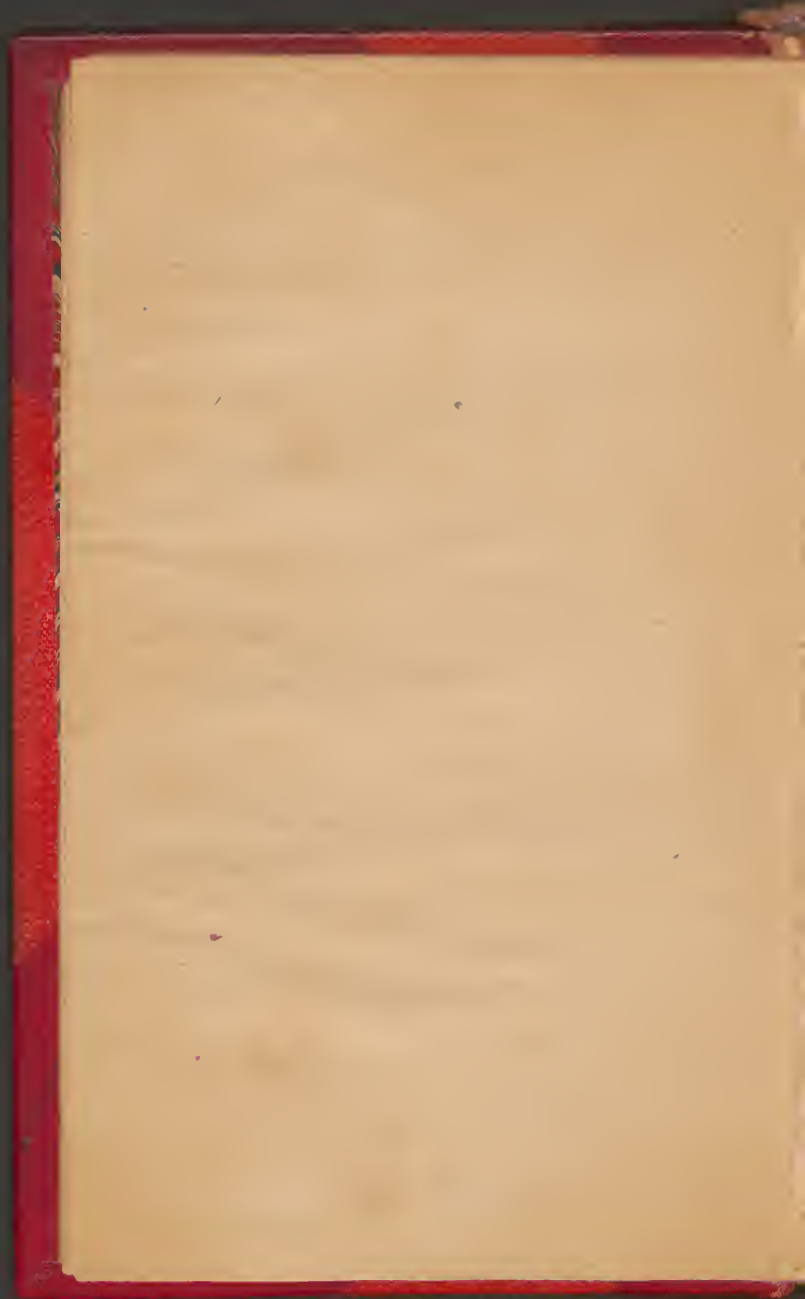


3
Sir William Blizard

(1793 - 1836)







1 2 6 3 3
1977
Lectures

72

on

Anatomy &c.

by

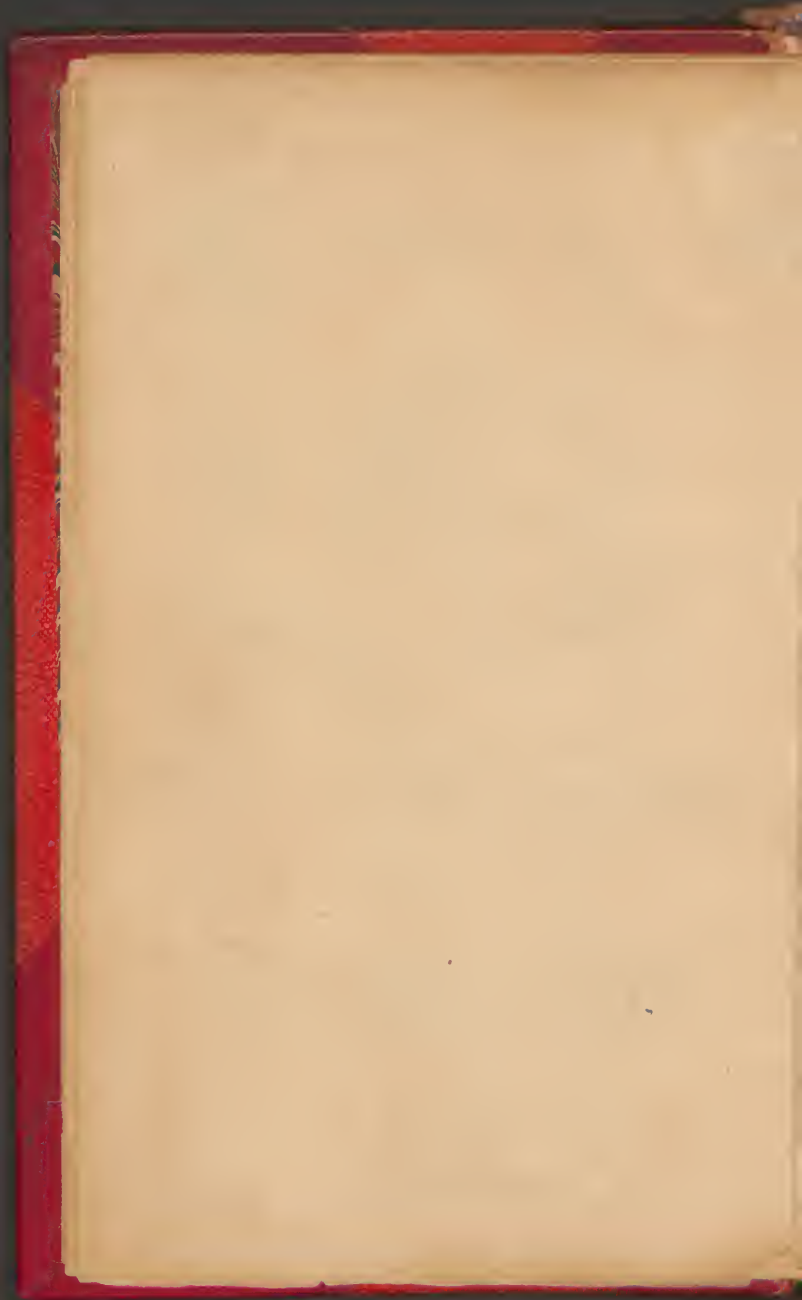
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Mess^{rs} Blizard & Prange

at the

London Hospital.

1791.



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Jan^y 20th 1791.

Mr. Blizard this day read over his introductory Lecture, in which he considered the ancient Method of practising Physic & Surgery as very vague & uncertain; The knowledge of the human frame, being but little understood, at that time, because scarcely any thing but Animals were dissected, whose various parts perform different functions, from the same parts in the human Subject, which should be attended to in practice, so as not to confound the one with the other.

The next considered Anatomy, as the Groundwork of Physic, observing that the Healing Art is divided into 2 parts, Physic & Surgery, The former of which comprehends all internal Cures &c. The latter

2. all the manual & operative part &c.
That these 2 should be joind toge-
ther, & that tho they were different,
it was difficult to determine the
just bounds of each, for that the
Physician & Surgeon often indis-
criminately trespassed on each other;
tho he said this was to be excused,
when the motives were good, & from
a desire of prolonging the life of a
Fellow Creature; tho he regretted this
was often otherwise the case. He on
account of the utility of this Sci-
-ence justly ranked it before any o-
ther; He also esteemed it the most
ancient of arts, tho, says he, before
Luxury & Dissipation were introdu-
ced among the primitive Inhabitants
of this Globe, Diseases were little
known, wherefore little need of Reme-
dies. ~ He said that when Men
first began to Congregate & assemble
together in Towns, Villages &c. they

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then began to make distinctions of 3.
Men, such as Priests, Legislators,
Warriors, Magistrates &c. As these
were generally very publick Cha-
racters, if they had performed their
various functions during Life
with applause &c. the Love the
People bore them, shew'd itself af-
ter Death, by endeavouring to pre-
serve their Remains by embalm-
ing the Body. The first publick
Mention of which we have in the
Old Testament concerning Jacob,
who was embalmed by his own
Physicians in Egypt: surely, says
he, this could not have been the 1st
time of it's being employ'd &c. He
then went on to remark that a
Surgeon; was not one who under-
stood the perfect management of
a Knife, but one who understood the
various parts of the Body, with all
their Uses, & when an Operation was

4. absolutely necessary. — He next observed that We had made greater Advances in Surgery within this Century or two, than for near 2 or 3000 Years before; Our knowledge of the Lactals; Receptaculum Chyli; Thoracic Duct, & principally to Circulation of the blood, discovered by our illustrious Countryman Dr. Harvey, which Discovery would forever immortalize his Name &c. He then finished his Lecture by stating how this course would be conducted &c. —

Jan^y 28th

M^r. Blizard this day explained some of the definitions given in his little Remembrancer.

The first Definition respects, Animal Matter, considered by
him

him, as, "Vegetable Matter, modified
by the moving powers; neither Acid
nor Alkaline; possessing a princi-
ple of Vitality." He then observes
in the Words of Scripture "All flesh
is Grass." Which he attempts to
prove by saying, that Carnivo-
rous Animals which prey on others,
have again preyed on themselves; it
will be found (if you examine still
higher, that some one Creature
feeds upon the Grass & herbage, &c.)
that therefore these Carnivorous
Animals do receive their Sustenance
from the same, "Vegetable matter
modified &c." His 2nd Definition
respects, Life, by him considered
as, "The existence of the Vital prin-
ciple in Animal Matter, either ac-
tively or latently, as relative to the
moving powers." "In Blood is the
Life of Man." —

6 This Vital Principle, he imagines, a subtil, aerial, something, either active or latent &c. that is where the functions of the moving powers are imperceptible &c.

3rd Definition - Death - "The Destruction or Deprivation of the Vital Principle." People &c. are not always dead when supposed to be so, as in the case of Drowning, the Vital principle, in that case being latent, not extinct.

4th Putrefaction - "The Natural Decomposition of Animal Matter after Death." When the Vital principle is entirely extinct, the law which each particle of the various Components bears to it's like; occasions this Decomposition of parts; that they may thereby more readily combine. &c. -

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5th Constituents of Dead Animal Matter. —
"Duties of, & Analysis by Fire, prove
that Animal Matter is compounded
of watery, earthy, saline, aerial, in-
flammable, & metallic Matter; but
affords no Information respecting
these parts in their State of Uni-
on with the Vital principle"

6th Solids — "Animal Matter, whose
earthy part, bears a relatively
large proportion to the other Consti-
tuents" —

7th Fluids — "Animal Matter whose
watery part bears a relatively
large proportion to the other Consti-
tuents" —

8th Seats of the Fluids & Solids —
"Vessels, Cavities, & Cells," He obser-
ved that he divided it into 3; more for
the sake of perspicuity than any
other cause; for that Cavities &
Cells, were in fact the same thing.

- 8 9th Anatomy. "The Art of dividing & examining the parts of Animals, to ascertain their Structure, Situation & relative Connection; divided into Human & Comparative".
10th Physiology. "The Science of the Functions of the Animal Organs".
11th Pathology. "The Science of the Seats of Diseases, & the Nature of the Changes of the Structure & Functions of the Animal Organs in Diseases."

12th Surgery, "The Science & Art of salutarily actuating the moving powers, & manually obviating & removing obstacles in the treatment of Diseases assigned to its Aid!" - He then made a few Observations, respecting these several Heads & finished his 2nd Lecture. -

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Jan. 29th M^r Crange continued
the explanation of the Definitions.
N^o 1 Blood. "Proper Animal Matter,
from various proportions of the
Constituents of which, all the parts
are formed & supported, & into which
they are returned". Nutrition
may be considered as a Secretion;
We are constantly receiving a
supply from the Blood & are con-
stantly losing by Absorption;
If it were not so, we should be
constantly increasing in Bulk.
It is the Blood which affords the
Nutritive parts, & which is the
Vehicle, by which they are retu-
ned. The Arteries deposit; & the
Absorbents take away &c. The
Cellular Substance is full of a
fluid, which if separated too fast,
or if the Absorbents are weak

10. A Dropsy is the consequence.

2nd Spontaneous Separation of the Blood without Putrefaction.

Serum, Crapamentum & Coagulable Lymph, or Gluten. The various Constituents of Animal matter are distinguished by Putrefaction &c.

3rd Gluten. "The proper Matrix for Vessels, &c. & of which also they are properly formed; indeed no part is properly formed without it. Granulations on the surface of Sores, is at first nothing but this Gluten, of a pale Colour, at length turning red & becoming Vascular, on which the Vessels elongate themselves; but if this Gluten is constantly removed, no Granulation will take place.

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4th Secretion. "A Separation & Deter-
mination of Character of some-
thing from the blood." - per-
formed by the means of those bodies
termed Glands; as the Salivary,
for Saliva, Kidneys for Urine &c.

5th Secreted Matter. "Whatever is put
out of the sanguiferous System
of Vessels." as the various kinds
of Fat, Bile, &c. &c.

6th Nutrition. "The Secretion of
the proper ^{constituents} of a part."
That Matter taken into the Sto-
mach; forms the principle of Nu-
trition called Chyle &c. When-
ever any part is removed, it must
be renewed by the constituents pro-
per thereto.

7th Fibre. "An imaginary Line, con-
sisting of points of Animal Matter."

12. It is an imaginary Line &c. But
a bundle of them may be sepa-
rated almost ad Infinitum.
An Animal Line is; points, lay-
ing by each other, till their
length exceeds their breadth &c.
8th Elasticity. "The Sphere of power
of Attraction of particles of Mat-
ter, after a Degree of Separation".
Cohesive Attraction, is that which
two bodies possess when at a cer-
tain distance from each other.
&c. The Sphere of Attraction, is that
space allowed between the 2 ends
&c of a body within which space
if stretched, they would retract
into their place, but beyond
would break &c &c. —
9th Membrane. "A collection of fibres,
whose Breadth, greatly exceeds
its

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13.

its Thickness; of a pale Colour; elastic;
has 2 Surfaces, one finely polished,
the other cellular. A Cloth may
be compared to a membrane, &c.
No Membrane in the body but
what is composed of fibres; They
are very vascular, but are
not supplied with the Crassa-
mentum or Thick part of the Blood.
The Tunica Conjunctiva of the
Eye, in an Inflammation of that
part, we see, receives red glob-
ules; they are elastic, as we see
of the Peritoneum in Ascites.
Have 2 Surfaces, One finely po-
lished, (this is alway next those
parts contained within them &c.)
is the secreting surface, has in-
numerable orifices, which if the
secretion is too quick, causes Dropsy.

14 The other; is cellular, & is external, easily adhering to the surrounding parts. &c.

10th Cellular Substance: "Small portions of Membrane; connected so as to form communicating cells." This we see, by passing a Blowpipe, into the cellular Substance, & by blowing, the Wind will inflate all the Cells; It is by some, described into Reticular & adipose but this is a wrong Idea. It is of great use; being an universal connecting Medium. It connects, the fibres of Muscles, the smallest particle of bone, the Lungs, are chiefly formed of it, & it is elastic, giving us that Springiness, which we possess.

11th Valve. "A Duplicated membranous ^{is} production, formed in Tubes & Cavities to assist in the determination of their Contents." A Vessel is Cylindrical Membrane. — A valve, is a Duplication of this Membrane, it lays in the Direction of the fluid contained in the Vessel, urging it forward, & obstructing its Return.

12th Artery. "Muscular, membranous, strongly elastic, originates in one of the Ventricles of the Heart, terminates in becoming Venal Extremities." — These are elastic in every Direction. — When small ones are cut they retract & are comprehended by the Muscles in which they bury themselves; but those that are superficially placed, or on bone &c.

Upon being cut, are followed
by an Hemorrhage. The
Heart as we shall hereafter con-
sider is divided into 2 Sides, wh.
are subdivided into Ventricle &
Auricle. All the Veins of the
Body empty themselves into
the 2 Auricles, & the Blood is
expelled from the Heart by the
Ventricles, into those Tubes
termed Arteries, which termi-
nate either in Veins, open,
or receiving Extremities, & a-
vities, this last is seldom the
Case. These open Extremities
are discovered by Means of a
very subtil red Injection, of
Turpentine & Vermillion, &c. &c.

3.
Jan^y 31st M^r. Blizard considered 17.
the Nature of Nerve, with its Appli-
cation & Uses. Some Creatures
have no Brain, & may therefore be
considered as a Link in the great
Chain of Nature between Animals,
Vegetables. There is somewhat an-
swering to Sensation in them &
we may even say in Vegetables.
Without Brain we should be void
of intellectual Sense &c. There
are parts in us capable of sen-
sibility which have a Connecti-
on with the Brain, the Seat of the
Mind. This Mass termed Brain,
as we shall hereafter consider
is lodged in the Skull. We shall
now define a Nerve. Loosely fibrous
of a soft whiteness, flexible; proceed
from the Brain, Spinal Marrow;
or a Ganglion, terminates in a
Muscle or Organ of Sense. — Loose-
ly fibrous. — It is not so close, but
it.

18. it may divided. Of a soft white
ness. It is of a milky appearance,
tho' not that shining bluish
whiteness peculiar to a Tendon.
It is very flexible. proceeds from
the Brain, Spi. Moor: or Ganglion.
Anatomically speaking, every
Nerve is in a distinct form in
the Brain & Ganglion is a collec-
tion of Nerves, highly organized &
connected by Cellular Substance.
They terminate either in Muscle,
or Organ of Sense. All the Mus-
cles we know, are ~~nothing~~ to
those we are authorized to suppose
we know nothing about. —
Nerves are the Means by which
all Sensation is produced. Violence
done to a Nerve, produces pain;
if an Impression be made on a
Muscle, in which a Nerve is

produced, A change will take 19
place. Organs of sense belong
only to Animals with Brain.
Where & whenever Muscles are ap-
plied, Nerves must be applied,
Ergo, there is universal Sensation.
We should here with abruptness,
draw the Line, & honestly confess
that beyond this, we know nothing.
When we consider Muscle, how
much we are in the Dark res-
pecting Muscular Motion,
Nerves however small they may
be, may still be divided, ad in-
finitum. A Nerve may be con-
sidered as a Tree, its roots in the
Brain, & the Branches ram-
ifying into all parts of the body.
From this Idea, a person would say
a Compression of the Brain, would
affect the Nerves, & vice versa. -

20. Organs of Sense are disposed to receive Impressions & propagate to the brain. Delight, Pleasure &c. are all subordinate to 3 great points, Support, Recreation &

The Brain may be considered as a Medium between the Organs of Sense & moving powers, to receive impressions from one, & to propagate to the other. Every moving power is constructed to receive Impressions: & therefore in one general View, we may consider the whole Body as, an Organ of Sense. There are 2 Theories respecting the Nerves - The first is taken from the Idea of Vibration, it being imagined that a touch at one End of a Nerve will cause a Vibration to the Brain. The other is, that the Nerve is round & tubular, & filled, with,

3.
a subtil æthereal fluid, which if a 21.
part be touched it is altogether
moved upwards the Brain. In res-
pect to the first, There is no
Nerve in the Body so sensi-
ble to propagate sound; Even if
there was, the sound would be
arrested by the intervening So-
lids; As to the latter, as this
fluid has never been discover-
ed, it seems very improbable.
Nature of Introspection. There is
an inherent power in parts to
change, according as they may
be affected by the 3 great Causes
mentioned. Each part is framed
to perform various functions
from each other from different
Causes; The Eye from Light. The
Nose from odorous particles &c. &c. &
the Muscles from various Causes
from which primarily they

22. were intended to receive them.
But if the various Causes
convey too strong an Impres-
sion, they will destroy the
parts, they were intended
to serve, & if too weak, will
be inadequate to the Task
assigned them, Tho' custom
will render both, proper.

Feb^y 1st 1791. M^r Orange con-
sidered the Structure & formati-
on of bone. A collection of the 3
Species of Vesels, & Earthy Matter
in Cellular Substance, consti-
tuting an inflexible body. Tho'
this is termed inflexible, yet
a bony fibre is, when separa-
ted, flexible. Bone is then a se-
cretion of Earthy Matter in

in highly subtil State, floating in²³
 the Blood. We have before observed
 that the Gluten of the Blood seems
 the proper Matrix for Vessels to elong-
 ate themselves in &c. 'Tis a Collecti-
 on of this Gluten which we perceive
 as the very first Rudiments of the
 future Bone. (In a Compound
 fracture, the Stimulus, throws
 out a great Quantity of this Gluten
 which becomes a Matrix for the
 Elongation of Vessels. If a Woman
 is pregnant & has a fracture, You
 will find, that it will not heal
 till after her Delivery, as the Glu-
 ten goes to the formation of the In-
 fant, which would otherwise be
 determined to the fracture). At
 length it becomes organised, & the
 earthy Matter begins to separate
 from the Blood. Every bone is

24. is fibrous, connected throughout
by cellular substance. Bones
are Vascular, shown clearly by
Injections, & feeding Animals
with Madder, discovered by M. Bel-
cher). They are also lamellated
proved by destroying the soft-
parts by fire, or exposing to the
Air. In long bones, the fibres shoot
starting from the middle to the cir-
cumference; but in broad ones,
from several middle central points,
some have imagined that the bones
(which when young are in a carti-
laginous state) have been trans-
muted into bone, which is a wrong
Idea; The Cartilage being real bones,
earthy matter deposited. Exfolia-
tion is divided into 3 kinds; 1st spon-
gy or powdery one; 2nd of Lamella or
Plates; 3rd of fibres; There is

a 4th sort of Exfoliation, which takes²⁵ place after Amputation. The
 sort of Exfoliation seems to be that
 granulations taking place be-
 neath the unsound part, it is push-
 ed off; but the Truth is the Absor-
 bents take away a portion all
 round & as it were the bad becomes
 insulated, Granulation then takes
 place, & the bad part sloughs off.
 We must never remove a portion of
 bone, till Exfoliation takes place,
 but this done, you should assist
 Nature in throwing it off, who now
 considers it as foreign & extraneous.

There must be a more than ordi-
 nary Exention of the Heart & Vascu-
 lar System for the formation of bone.
 A way to prove the Vascularity of
 bone, is by immersing it in any di-
 luted Acid, which takes away the
 earthy part of the bone.

226. It has been doubted whether ^{having Sensibility} bones
They certainly have, tho' their
great Quantity of earthy
matter prevents their Sensibili-
ty. The Granulations of bone
are extremely sensible, which
would not be, did not the Nerves
in the bone elongate themselves.
Cancelli are formed by the re-
cession of the internal fibres of
the bone from each other, which
having no Resistance internally
press that way; the Consequence
is, the bone becomes thinner &
thinner at its extremities; so that
a Disease of this part would soon
penetrate the Cancelli, tho' in
the middle of the bone, many plates
may be thrown off without Danger.
The Use is to support the Medulla,
& they assist in expanding Artic-
ular Surfaces &c. &c. — Heads,

of bones & all processes, are original-27.
ly formed in a state of Epiphysis, or
Separation, having Cartilage in-
terposed, which is by degrees ab-
sorbed. — Bones are subject to
Inflammation. — — — —

Feb 9th 2nd. M^r Crange considered the
Nature &c. of a Gland. — "A Congeri-
es of the 3 Species of Vessels & Excre-
tory Duct" The secretions are per-
formed by means of the open
mouth'd Arteries, the remainder
of the blood being returned by
the Veins; & in respect to the fluid
separated, there are 2 opinions con-
cerning it. — Malpighi imagined
that at the end of the Artery, there
was a little Cistern or bag, & at the
other end of the bag, a small excre-
tory duct commenced; that a N^o. of
these small ones open, into a large
one &c. — — — — Ruysch maintains
that there was between the 2 Vef-

228. Vessels, no distinction, but that
the one began where the other
ended. The Office then of Glands
is to secrete from the blood, humours,
in various parts of the body; these
humours being of various quali-
ties & Uses, as, the salivary Glands
to promote Digestion; of the Larynx, to
secrete a bitter acrid wax prevent-
ing the admission of Insects; &c. &c.
But why the different Glands, se-
crete various humours from the
same Mass of blood we shall for
ever perhaps remain ignorant.
Glands are distinguished into son-
globate & Conglomerate; The former
being round & supposed to have but
one excretory Duct, as the Kid-
ney; the other composed of a
number of smaller ones, having
as many excretory ducts opening

into one larger, viz. the Pancreas; ²⁰
 But there is reason to believe all
 conglobate Glands are of a conglob-
 merate Nature, (this was shewn in
 a fetal kidney) — The secreted
 fluid however, receives vast charge
 from the Absorbents — Disease,
 Increased Circulation &c causing
 a distention of the vessels, giving ad-
 mittance to red Globules of blood,
 (which in proper health &c. receive
 only the gluten) causing the
 increased Redness of the Urine &c.

The Use of Glands may be
 ranke under 2 heads General & parti-
cular. — General, in respect to their
 being a balance between the solids
 & fluids. We should have a Plethora
 if the Kidneys could not part off
 the Urine separated, &c. — An
 increased Secretion of the Glands

223. very often draws away a clot,
which is occasioned by the stop-
page of the pores of the skin &c.
The particular use of the Glands
is the particular separation
each one makes, as the Lungs &
Skin separate from the blood the
most fluid & saline parts &c. -

There is also a general Use, resul-
ting from the particular ones, as
it gives an opportunity to the
parts to reabsorb; - In Jaundice,
the Bile is reabsorbed in large Quan-
tities, & the greater or less degrees of
Complexion, are owing, to the Quan-
tity of bile reabsorbed. &c. &c.

Glands have Nerves. They must
feel their Influence, without
which they cannot act...

Medulla - "Oleaginous Matter in
the Cellular substance, sustained
by the (cancelli of bone)." P. 265

the principle of Phlogiston. — It is 31.
originally secreted in a much more
fluid state; but after a time the
more fluid parts are absorbed. — It is
considerably redder in young bones
than in Old Ones, the Vessels be-
ing larger, & admitting Red Globules
into them. — Their Use is to answer
occasional Absorption & prevent
the fragility of the bone. In peo-
ple starved to Death, not only the
adipose Matter, but even this Medulla
is absorbed. —

Cartilage. — "Probably Gluten con-
tained in arachnoid Cellular Sub-
stance, of a shining whiteness, not
fibrous, next to bone in solidity, —
strongly elastic." — It does not appear
to be vascular, nor fibrous, & therefore
thought to be Gluten, strongly elas-
tic, which is its great Use, in ma-
king.

232. making us perform our motions.
with facility. — The Old Man
is stiff in his motions; The Carti-
lage which surround the heads
of the Bones, being reabsorbed &
bony matter deposited, the least
motion vibrates through his
frame, & he complains that in
walking his brain shakes, he
being deprived of that springing
which he formerly received from
Cartilage. — It keeps parts per-
vious as the Nose Palpebre, punc-
ture &c. — In its application to
the heads of bones it makes them
globular & very thick in the Cen-
tral part, & in cavities about
the edges making them deeper &c.

Feb 7. 3rd Mr. Orange this day con-³³
sidered Muscular Fibres. "Flex-
ible, elastic, Contractile." 'Tis
these alone which characterise
Muscle, which is the only part
of the body Contractile. Red-
ness is not the distinguishing
mark of it, this depends on its
Vascularity & the size of its Vessels
admitting the red Globules; There
are many muscular fibres with-
out any Redness, as the Iris of the
Eye. There must be muscular fi-
bres even in the fly, without which
he would be incapable of Motion;
We must admit that where there
is Motion, there must be muscular
fibres; but most probably, we
shall ever remain in the Dark
respecting the Cause of that Moti-
on. The Definition of Muscle,

2234. is, "Homogenes of Muscular fibres
the effect of whose contraction is
generally the same." A fibre we
have before considered as divisi-
ble almost ad Infinitum into still
smaller ones, therefore a Muscle is
made up of bundles of bundles of
these fibres, A fibre being only in
Imagination. Its power of contrac-
tion depends on the greater or less
N^o. of fibres, of which it consists.
Its sphere of contraction on their
length, tho' when N^o. & length com-
bine, the Muscle is very powerful.
All the Muscles are disposed to
contract; if any one remains in
that state too long, it is called
Spasm; if it contracts quick &
often tis termed Conulsion; Muscles
are plentifully supplied with

Nerves, possess a *Vis Inscita*, not 35.
acting under the Influence of the
Nerves; *Va Vis Nervia* entirely de-
pendent on the Will. Muscles
are termed Voluntary, Involuntary,
& those composed of both. The Mus-
cles of the Arm Leg &c. are Volun-
tary, under the direction of the
Will. The Heart is an Example
of the 2^d Diaphragm of the 3^d
Muscles are never in a state of
perfect Relaxation except in
the dead person. Muscles, are
termed Congeneres, which assist in
the same Motion. Antagonists,
such as are the Instruments of op-
posite Motion, as the Flexors & Ex-
tensors of the Arm &c. They are na-
med from their figure &c. as the
Deltoides, Biceps, Sterno Cleido Mas-
toideus. Sphincter Oculi, &c. &c. —

22. 36 Tendon "Closely fibrous, of a shining
bluish whiteness, flexible, inelas-
tic, proceeds from a Muscle."
No other Substance but an un-
elastic one would do, to fix to a
Muscle, which is Contractile.
It was originally supposed to be
compressed Muscular fibres, but
it exists in the Fetus in Utero
before any Motion takes place,
therefore I imagine it is not
so. — Muscles are named benni-
form, single ¶ & double ¶; but there
is a still more powerful one, in
which the Muscular fibres run
all round the tendon ¶. — Vessels are
small in Tendon only, admitting the
solid parts of the blood. — Their
Nerves are small & few, consequent-
ly they have little Sensation.
Aponeurosis. Expanded tendon.

The word Fascia is used syn. It 37
 is insensible like a tendon; Vessels
 are small, In a state of Inflammation,
 it becomes red by Vis a tergo,
 pushing forward the red globules
 into Vessels not capable of receiving it. In Amputation of the Leg
 Thigh, Forearm &c. - it is not unusual
 to have large flakes of it like brown paper come away;
 Stimulating Digestives are then
 useful, as the Circulation is languid,
 Muscular fibres are loosely
 connected by Cellular substance:
 are dependant on a proper Quantity
 of Nervous Influence, & of blood,
 with a proper State of the Connecting
 Cellular Substance. —

Feb. 28th 38 Mr. Orange this day, con-
sidered, The General Confirmati-
on of Bones. - All Bones are
divided into long & broad, having
parts, called Processes, common
to both; which are risings above
the level of the bone, These are
named Coracoid, Mastoid, &c, &c,
from their supposed resemblance
to a crows bill, nipple &c. -
Tuberosities are processes not re-
sembling any thing in Nature.
A process rising almost perpendicu-
lar, is called a Spine, if its edge
be flat, it is the Crista of the spine.
A spinous process terminates in
a joint. - &c &c - Coronoid process
also terminate in a joint. A process
standing out in a round ball, is
called Caput, or head, which have
a Cervix or Neck tho' in some scarce
distinguishable. A Condyle is

a head flat. Bones have Cavi-^{ties}
 ties or Depressions, which if deep are
 termed Cotyloid, if shallow Glenoid,
 tho in a recent Subject the Carti-
 lages make them much deeper.
 Pits, small roundish Channels sunk
 perpendicularly into the bone, Furrows
 are long narrow Canals formed in the
 Surface, ending in Grooves. Nitches
 & Notches small Breaches in the bone;
 Sinuosity, broad superficial Depresi-
 ons, without Brims: Fosse large deep
 Cavities unequally surrounded by
 high Brims; Sinuses, large Cavities
 within the Substance of the bone
 with small apertures. Foramina
 Canals piercing through the Substance
 of the bone, when this goes any way
 in a bone, the middle part retains
 the Name of Canal &
 Epiphis. All processes & heads of
 Bones, are originally formed in

12. 10. a state of Separation, by inter-
vening Cartilage, which some-
times remains through Life; tho
this is characteristic of a weak
frame, rickety &c. & this is also
the case with most scrofulous
people. We shall now speak on
Articulations, which are 3 fold,
1st Symphysis. The Union of 2 bones
by intervention of a 3rd body, is
divided into Syncondrosis, where a
Cartilage intervenes, as the Ribs &
Sternum; bodies of the Vertebrae,
& Ossa Pubis. Syndesmosis or Syn-
neurosis; Ligaments intervening,
as, in all moveable Articulations.
Symphysis, flesh intervening, as, a
Muscle from one moveable bone to another,
2nd Synarthrosis. Immoveable Arti-
culations, divided into Sutura, The
mutual Indention of 2 bones, when

their fibres are flexible, as the bones of the Head, — Gomphosis. One bone fixed in another, as a Nail in a piece of Wood; thus the Teeth are placed in their Sockets. Synchondrosis, or ploughing, when a thin Lamella of one bone is received into a long narrow furrow of another, as the Vomer with the processus Azygos of the Sphenoid bone.

3^d. Diarthrosis. Allowing of large sphere of motion, divided into Enarthrosis, Artrodia, Ginglymus. The 1st is like a Ball & Socket, ~~when~~, as the Head of the Femur, Acetabulum. The 2^d is when a round head is received, in a superficial cavity, as the Humerus & Capula. The 3^d is subdivided into 3. viz. Trochoidea when 1 bone turns on the other as a wheel on its axis, thus the 1st & 2^d Vertebrae. — The next species, is if

2. A bone receives & is received by corresponding prominences & depressions, as the Humerus & Ulna, Femur & Tibia &c. - The 3rd species is, when one bone is articulated to another by more than one place as the Radius & Ulna &c. -

The Cranium is formed of many pieces, tho' the upper part, strictly so called is composed of 8 bones: 6 proper, (The Os frontis, 2 Osa Parietalis, Os Occipitis, & 2 Osa Temporum: These have nothing to do in the formation of the face,) & 2 common, both to the Head & face, viz Os Ethmoides & Os Sphenoides. In the fetal Cranium, the bones are separate, & therefore serve as so many points of Ossification, admitting also

of the growth of the brain, but the ⁴³
 time of birth, the bones lap over
 each other, & it is brought forth much
 easier than if the head was one
 solid piece. — When Ossification goes
 on too quick, 'tis ranked among the
 causes of difficult Labour. The
 fetal Cranium is more rotund
 than an Adult; The European
 Cranium also differs considerably
 from the African &c. — That part
 of any bone, on which ^{a muscle} acts, is ren-
 dered smooth by the Attrition; but
^{where} it acts from, the bone is drawn
 out into a process, as the Mastoid
 process is formed by the action of
 the Sternocleidomastoideus, there
 being little or none of this process
 in the Fetus, who has not made
 use of that Muscle. —

44. *Sinciput* is the Name given to the front of the Cranium; *Occiput* the back: The *Temples* are the Sides; *Vortex* the top: & *Basis* the bottom. — The Cranium is composed of an external & internal table, which last from its natural polish is also termed *Vitreum*. Between these tables are *Cancelli*, called *Diploe*. — *Crania* differ much in Thickness, as also does the *Diploe* in different *Crania* in Quantity; Thin ones sometimes having much, & sometimes, none at all & vice versa &c. — *Pituitary* — Are accurately filled with brain, & as there is no evidence externally of there being a pituitary or that it is a thin Skull; you should always treat me, as if you were on a pituitary or performing the Operation on a thin Skull.

Feb. 5th. W. Orange considered 1st 115.

The Os frontis, which occupies the fore & upper part of the cranium, its figure resembles a cockle shell, externally convex & vice versa; its Coronal Edge joining with that of the parietal bones, forms the Coronal Suture. The Orbital ridge ends in the ex- & in-ternal angular processes. It has also the Orbital process, going horizontally backward, which forms part of the Orbit, & is inferiorly, internally concave, &c.

Internally, we have the spine of the Os frontis, from which arises the falx, dividing the 2 hemispheres of the brain. The Cavities & foramina of this bone, are; above the Orbital ridge, a notch, which generally becomes a complicated foramen, called supra orbital foramen,

is expressive of the passage of the
1st branch of the 5th pair of nerves.
More internally is a little notch
expressive of the passing of the
trochlea through which the ten-
don of the trochlearis muscle pas-
ses. — Behind the external angu-
lar process is seated the Lachrymal
Gland, the principal support
of the fluid called tears. Between
the 2 Orbital processes is the
Ethmoidal figure. — The foramen
caecum lies between the Crista
Galli of the spine of the Os frontis.
The frontal sinus is occasioned
by the reception of the internal
table from the external; & opens
into the Nose. — The fibres
of the internal table of the Skull

are sooner obliterated, than those^{11.}
of the outer one, it being a lesser
diameter &c. — When the sagittal
Suture extends down the Os frontis
we never have a Spine; we may
therefore, if a Suture extends
down the Os frontis, be sure with
safety; but this should not be
very low down because of the frontal
Sinus. The spine is formed by
the fibres of the internal table,
(which as being the less circle) soon-
er connecting themselves turn
inwards. A Man should be exceeding
guarded in his prognosis concer-
ning a Wound of the orbital pro-
cesses, on account of their firmity
they forming a support to the
anterior Lobes of the Brain &c.
We shall now take a View of the

48 Parietal bones. — They are of a square figure. Are connected anteriorly to the Os frontis by the coronal suture; above to each other by the sagittal; & posteriorly to the Occipital bone by the lambdoidal; laterally to the temporal bones by the squamosi. &c. Its different sides ^{or edges} being distinguished by saying the coronal, sagittal, &c. — The angles, into anterior superior, &c. — This bone has externally a semicircular ridge commencing at the external angular process of the Os frontis, which is expressive of the fascia of the temporal muscle, formed in this manner. The pericranium is composed

of 2 Lamella: The first of which, ⁴⁰
entirely surrounds the Cranium,
the other or upper one leaves the
under at the attachment of the
temporal muscle, which it co-
vers & is itself attached to the
Zygomatic process of the tempo-
ral bone. Internally along the sa-
gittal future lies the longitudinal
sinus. At its anterior inferior angle
is a groove expressive of the spinous
Artery, which is sometimes formed in-
to a canal; This place should be avoid-
ed in the Trephine; The principal branch
of this Artery, runs parallel to the coronal
future. Pits are oftenest found in this
bone; The squamous edge appears
thinner, tho' it is made of the same
thickness, with the rest, by the Osteoporus.

50. The posterior inferior angle of this bone has part of the groove formed for the lodgment of the lateral sinus.

Feb. 7th 1815. Blizard considered the formation &c. of the Os temporis. wh. is divided into the pars squamosum, Amygdalaris externally, & petrosum internally. Pars squamosum, has an arch like appearance, & is very thin. It is very unequal on the inside, occasioned by the convolutions of the brain. externally we have the Zygomatic process, joining with one of the same Name, of the Os Mala, & it forms a kind of Juxum, through which the temporal muscle passes, The Masseter muscle arises from this process. The appearance in recent & dry bones is very different.

3.
Pars Mamillaris. - supposed to resemble a Nipple; is formed into a projecting body, which is cancellous, which is connected with the internal ear which is very dependant on its goodness.
Pars petrosa. - Has 2 surfaces, & a ridge from which proceeds the tentorium. Its superior surface forms a support for the anterior lobes of the Cerebrum; the lateral part of the middle lobe ^{of the Cerebellum} being applied to its inferior surface. - Externally, going obliquely downwards & forwards is the Styloid process, which is an attachment for many muscles. - Between this, & the Zygomatic process, is the Vaginal process, Auditory; In this latter is a ridge ~~expressive~~ expressive of the Attachment of the Membrana Tympani, which divides the external from the internal ear. -

This Bone contains the cavity in which the inferior maxillary bone is articulated. The 7th p. of Nerves enter the meatus internus in the petrous bone; & there divide into, *portio dura*, (which goes out of the foramen *stylo Mastoideum* situated between the *styloid* & *Mastoid* processes & then becoming a cutaneous Nerve) & *portio mollis*, which is destined for the Organ of hearing. Behind the vaginal process is the extremity of the foramen *Carotidæum*, which goes up to the brain at a right angle, thus preventing the too quick projection of the blood. At the poster. infer. angle of the parietal bones are the lateral sinuses, from wh. commence the internal

3

Jugular Veins, which come out at the 52.
foramen sacrum with the 8th of
Nerves, which is sometimes divided
by a bony ridge from the Vein. —
Most of the processes are wanting
in a fetus. —

Feb. 28th M^o Orange considered the
Os Occipitis. — Somewhat triangu-
lar, bounded by the lambdoidal suture.
Terminates in a process named basi-
lary or cuneiform, which joins with
one of the same name of the sphenoid.
The Medulla oblong. lies in the hol-
low of this process, and the basilar
artery also lies on it. Externally post-
eriorly are 2 processes, named condyles,
to which the 1st Vertebra is fixed by
its superior oblique processes. — All
except a small triangular portion of

24. This bone is covered by muscle, which cannot therefore be trifled. The various Eminences &c. are expressive of the Attachment of several Muscles. Nearly opposite the external ridge, internally, is a transverse one, which has a perpendicular one crossing it, forming a Hollow, in the bone; the 2 upper of which are expressive of the position of the 2 posterior lobes of the Cerebrum. The Sella is attached to the Cross ridge; the Tentorium to the transverse. Between the Basillary process, & body of the bone is the foramen magnum, through which the Medulla oblongata passes from the brain; the Vertebral arteries to it. Below the Condyles.

are ^{the} 2 foramina Condylodea, through⁵
which the 9th p. of. Nerves pass to
the tongue. — On the outside of these
lie the Jugular for. through
which the internal Jugular Veins,
& 8th p. of. Nerves pass. — —

Os Sphenoides — Is the most diffi-
cult of all the bones of the Crani-
um; It properly forms the basis
Cranii, & as a wedge to the other bones,
it is also one of the common bones.
Its situation renders it impracticable
for surgeons practise. It consists
of, Body, & laterally Wings, & has
been said to resemble ^{a bat} flying. —
Of the Body — It has a superior &
an inferior surface; An anterior
& posterior part. — Its superior
surface is hollow, forming the
Sella Turcica, anterior to which, is,

a smooth surface exposure of
the conjunction of the optic
Nerves. It ends in the posterior
clinoid processes. Its inferior
surface has only a solitary pro-
cess, named *Azygos*, which receives
the Vomer coming into the Nose.
Its anterior part is cellular,
joining with the Cells of the Eth-
moid bone, which open into the
Nose. At its posterior part is
the basilar process. ---
The Ala or Wings, end posteriorly
in a point, termed the spinous
processes, simply, to distinguish
them from the transverse spinous
processes, which join the broad
part of the Ala to the body,
ending round, in the anterior

3

Cervoid processes, behind which
the internal Carotid Arteries run,
sometimes a complete foramen
is formed here. — The broad parts
of the Ala are formed into 3 sur-
faces, anterior external & internal,
the 1st forming part of the Orbit &c.
Externally, we see the Pterygoid pro-
cesses, dividing into ex & in-ternal; the
latter is formed into a hook, over
which the tendon of the Circum-
flexus palati plays, — The fora-
mina optica, are rather anterior
to the smooth surface mentioned. —
Next are the foramina laceria, beneath
the transverse spinous processes, thro-
ugh which the 3rd 4th 1st branch of the 5th
& 6th p^r of Nerves pass. — Below
these are the foramina rotunda,

Feb 11 58 through which the 2nd branch of
the 5th p^r of Nerves pass, - Still
lower are the foramina ovalia,
thro' which the 3rd branch of 5th
p^r of Nerves pass. - The foramina
spinosa are still lower; these ad-
mit the spinous Artery. - There
is another foramen through which a
considerable branch of the 2nd branch
of the 5th p^r of Nerves is reflected &

Feb 9th M^r Orange considered the
Ethmoid bone. - This bone complete-
ly fills up the Ethmoidal fissure
of the Cr. frontis; & forms the prin-
cipal bony part of the Nose;
It is very delicate & tender; -
Has a superior perforated surface
termed the Cribiform Lamella,

3.
An inferior cellular surface, hang-
ing down into the Nose, — an ante-
rior projecting surface, on which
the Nasal bones rest; & a posteri-
or surface joining with the
Cells of the Sphenoid bone. It is
divided into 2 parts by a thin
bony plate, termed the Nasal La-
mella, the upper part of which
is rounded, & named Crista Galli.
The anterior Lobes of the Cerebrum
rest on the Cerebriform Lamella; so
that a blow on the Nose, often
drives the Nasal Lamella & Crista
Galli into the brain; In such a case
we should introduce a pair of forceps lined
with sponge &c. & seizing on the Nasal
Lamella, draw it from its situati-
on, which is all that can be done.

50. It is bounded on the sides by the Os
planum one of the bones of the
Orbit; Next the Nasal Lamellae are
placed the superior spongy bones.
The tenuity of these bones & the hard
make us cautious, in the introduc-
tion of Instruments into the Nose,
or detaching a Polypus from them.
Superior Maxillary bone. - Joins
the Os frontis, Mali, &c. &c. It is
irregular, &c. Its Nasal process has
a groove formed in it, which by the
junction of the Os Unguis, is formed
into a Canal called the Ductus ad Nasum
above this, is the tendon of the Orbic-
ularis palpebrarum. - Its anterior
edge is formed for the reception of the
Os Nas. - Its upper part is named
the orbital process, going horizon-
tally backward, forming part of
the floor of the Orbit & roof of the

67.
3.
Antrum. Its outside, receives the
Cheek bone; termed its malar process;
its inferior edge termed its alveo-
lary process, has the alveoli, or bick-
ets for the teeth formed in it. These
alveoli are absorbed in Old Age,
& occasions the Nose & Chin to meet.
Internally is the palatine process,
doubly concave, forming part of
the roof of the Mouth & floor of
the Nostrils; The remainder of the
roof &c. being perfected by the Ap-
plication of the palatine bones. — Just
beneath the Orbit is the Infra Orbital
Foramen, thro' which the 2^d branch
of the 5th p. of Nerves passes. —
Os Mali. — Gives the Rotundity to
the face; — Its maxillary process joins
the maxillary bone. — It has 5 pro-
cesses, viz, superior, inferior, orbital, Max-
illary, & Zygomatic. & Internal Orbital.

Feb 10th M. Grange considered
the Os palati. These may con-
sidered as parts of the Maxillary
bone; they finish the Roof of the
Mouth & form the Ventrals; doub-
ly concave; It has 3 processes, viz,
palatine, Sterngord, & Orbital.
This very spongy & thin often
coming away in the Luis Venereus,
The Voice then becomes impaired,
& there is a difficulty of swallowing.
Os alari. - These form the bony
Arch of the Nose; but are not
continued to its Extremity, as
it would be in danger of fracture.
They are of different figures, wh.
causes the various Shapes of
Noses. Their upper part is
bulbous & thick, connected with
the Nasal process of the Os fron-

63. 3.
tis. Their middle rests on the
Nasal Lamella of the Ethmoid bone,
their sides on the sup. Maxillary.
In a fracture of these bones, we
should be exceeding guarded; &
not, as is generally done, endea-
vour to depress the prominent part
which is the natural state of it;
but to elevate the depressed part,
wh. has been beaten in. We must
first ascertain the Condition of the
Nasal Lamella with a probe, if it
is driven up into the Brain, draw
it gently down with a pair of forceps,
but if it is found, you should, with
a Director or piece of wood defended with
Linen, elevate the depressed part.
Vomer. Its upper part, has a
groove, in wh. the Processus Cylind.
of the Ethmoid bone, is received,

64. This with the Nasal Lamella
forms the septum of the Nose;
There is however a triangular
Nob. which in the recent
state is filled up with Cartilage.
Inflammation of the bones of
the Nose, should be removed by
Irrigations &c. as soon as
possible, as they soon exfoliate.
Cyathus... Is composed exter-
nally of 2 smooth concavities & a
middle ridge; It is fixed to the groove
in the maxillary bone, thus com-
pleting the ductus ad Nasum.
This bone it is, which is perfo-
rated in the Operation of fistula
lacrymalis, carrying the In-
strument downwards & back-
wards. —

Inferior maxillary bone. — consists of 5.
of a body, & posteriorly the Rami, end-
ing in the Coronoid & Condylar processes.

Its inferior part is the basis, the middle
is the symphysis, which makes the
difference of Chin, by projecting
more or less. — The part where the

Rami go off is termed its Angles.

The Condylar processes form a sort
of Enarthrosis Articulation, with
the articular Cavity in the temporal
bones. — To the Condyles are attached

the temporal Muscles, & all the Rami
are covered by the Masseter Muscles.

From the basis, rises a perpendicular
process for the Reception of the

teeth termed alveolar. Internally
at the symphysis &c, are several

protuberances, expressive of the
attachment of various Muscles, as
the Digastric &c. — Just below

Fig. 66. The Coronoid process, the Buccinator Muscle is attached. On the inside the Ramus & 2 holes, the entrance of a Canal thro which the 3^d branch of the 5th pair of Nerves, & an Artery pass, to supply the Teeth coming out near the symphysis of the Chin externally. Fractures of this bone often happen, & sometimes a troublesome Hemorrhage takes place, by the contraction of the Artery into the bone, which cannot be got at without taking a piece of the bone away.

Sutures, & formation. Bones are fibres, which in ^{long} bones, radiate from the Centre to Circumference, these at length approach & pass between each other; but they meet resistance as they approach, &

thus a future is formed. These 67. 3.
sometimes remain through life,
at other times they are obliterated. There are 5 principal
futures, the coronal, extending across
the head; the sagittal, placed longi-
tudinally on the skull & sometimes
continued down the \mathcal{C} . frontis. the
lambdoidal \mathcal{C} , rather farther back than
the Vertex & going oblique \mathcal{C} downwards,
& the 2 Squamous, a little above the
ear. The best Method of tracing
these, is; about an Inch from the
external ang. ^{is the coronal, going} \mathcal{C} obliquely upwards
& backwards, about the length of a
common probe from the Nose. The
Sagittal terminates in a line carri-
ed round the Cranium from the ex-
ternal ang. \mathcal{C} process; & the lamb-
doidal terminates just above the
Mastoid process.

Feb. 11th M. Orange, Considered
the spine, beginning at the condyles
of the Occipital bone; Consists of true
& false. The true comprehending 24
Vertebrae, the false, the sacrum &
appendix (exendris... The true one
divided into, 7 Cervical, 12 Dorsal, &
5 Lumbar, all of which agree in the
general Character of having a body,
(except the 1st Cervical,) & processes; The
bodies placed before, & 7 processes,
2 transverse, 4 oblique, & spinous.
The specific Character of each is
different; viz. The Cervical Vertebrae,
are flattened at the fore part, on wh.
the Oesophagus rests; the Dorsal,
laterally, allowing room for the
lungs &c. & the Lumbar at their
fore part, giving room to the Viscera.
The bodies are, greatly cancellous

69. 3.
Their edges are covered by a thin
plate of bone, & between each is a
thin plate of cartilage & Ligaments.
The 1st Vertebra, called Atlas from
its supporting the head, differs
from all the others very materi-
ally, it has no body, but in its
place a bony Arch, on the inside
of which is ~~scated~~ a smooth surface
to receive the processus dentatus of
the 2nd Vertebra, round which it moves.
Its superior oblique processes are arti-
culated with the Condyles.

The Cervical Vertebra may always
be known by a hole in their trans-
verse processes, forming a canal for
the transmission of the Vertebral
Arteries. The transverse pro-
cess of the 1st Vertebra, extend
out much further than the others,

2^d 70. which occasions the Artery to make
a curve, before it enters the for-
amen magnum. Its spinous is
so small, as scarcely to deserve
that Name. The 2^d Vertebra
call'd Dentata, from its toothlike
process, which arises from its body
Grasps on the inside of the 1st Verte.
from it Ligaments to the Cranium
which fasten it to - This pro:
is sometimes fractured in Chil-
dren, which causes instant Death,
as the Spinal Marrow is compres-
sed, having an angle form'd by
the Head falling forwards: Altho-
plex or concussion of the brain is
thought oftentimes to be the
Cause. Therefore in weak Chil-
dren, something placed to keep
the head erect, is not amiss. -

The Motion allowed of between the 11.th & 12.th Vertebrae, is greater than between any other, The Medullary Canal, is always largest in Vertebrae having most motion. The remaining Vertebrae of the Neck are pretty much the same, The spi: pro: of each being bifurcated. They grow larger as they descend, the 7th being not unlike the 1.st Dorsal. Dorsal Vertebrae are compressed laterally, have no holes in their trans: processes. At their lateral parts is a pit expressive of the Rib, & their transverse processes are pressed by the tubercle of the Rib, in respiration. Their spinous processes stand downwards, & are very long. The last dorsal Vertebra, resemble the 8.th Lumbar.

2^d 72. Lumbar Vertebrae... Are largest
of all the others; processes differ-
ent. — by the application of
Vertebrae we have lateral holes
for the transmission of Nerves,
& Vessels &c. The true Ver-
tebrae, may be considered, as a
pyramid, its base, the last Lum-
bar Vertebra. — The Os sacrum
or false Vertebra, may also be
considered as an inverted py-
ramid, its base joining the base
of the true — — —
COSTA or Ribs. Of these there are
12 on a Side, 7 true, connected
with the Sternum, & 5 false, con-
nected with the 7th true one &c.
There are the same N^o in a Male
as in a female. They all agree

in having a head, a prominent
tuberosity, an Angle, & a superior
& inferior surface termed Coste. &c.
The 1st differs from the others;
it is placed nearly horizontal
& is immovable, having Liga-
ments coming from the Caricle, so
that in Inspiration, the inferior ribs,
are brought toward this, by the intercos-
tal Muscles, which turn them outward,
& the Diaphragm descending enlarges the
Cavity of the Thorax. Expiration, is the
contraction of these Muscles. Their heads
are framed for articulation with the dor-
sal Vertebra; their inferior Coste has a groove
in which the intercostal arteries run. -
fractures generally happen beyond the angle
of the rib. &c. In the Operation of Emphysema,
we must keep close to the superior edge of an
inferior rib, on account of the Arteries &c.

2nd Feb 12th. M^o Orange this day considered the Sternum. Said to consist of 3 pieces of bone, though one is named the Xiphoid Cartilage; Altogether it is externally, somewhat Convex, & a little Concave internally. The 1st portion is largest, & has laterally a Depression expressive of the attachment of the Ribs. The 1st Rib is attached entirely to this; The 2nd Rib is attached between the 1st & 2nd bone. The 3 portions are often altogether ossified, so as to make but one bone. The Sternum is very light & Spongy, apt to be affected with Caries, & then crumbles away, &c. — 'Tis recommended to trephine this bone, when matter is formed in the anterior Mediastinum. Fracture sometimes occurs, the only Remedy then is to lay the person on his back, raising him up with pillows &c. &c. placed under him. —

Upper Extremity, ~ Divided into, ⁷⁵
Shoulder, Upper Arm, Fore Arm,
Carpus, Metacarpus & fingers. ~

Shoulder. ~ Consists of 2 bones,
the Clavicle, & scapula. ~

Clavicle. ~ Gives that figure to
the trunk which it possesses, by
keeping the upper Extremities
at a distance. ~ It is said to resem-
ble an Italic S, placed horizontally.
It has a body, & 2 Extremities, named
sternal & scapular. ~ The sternal
is larger & more rotund than the other.
It has Ligaments, allowing of a Mo-
tion every way; ~ It acts as a ful-
crum to the upper Extremity. Its
inferior part has a roughness expres-
sive of a Ligament, going to the 1st
Rib. ~ Its scapular Extremity is
flatted, having a smooth ending sur-
face, expressive of its attachment
with the Acromion of the scapula.
Beneath is a roughness, from wh.
a Ligament goes to the Cravoid process.

Fig. 76. It is almost entirely covered by
Muscles, as, the Deltoid, Pectoral
Sterno Cleido Mastoideus &c. &c.
About the middle is a hole through
which the medullary Artery pas-
ses. Fractures of this bone of-
ten occur. & the weight of the
upper Extremity will depress
the part next it, & make the part
affixed to the Sternum, appear
prominent; tho' it is natural, as
the Sternum, is a fixed part; Our
Care is to elevate the depressed
part, & keep the Shoulder back by
a figure of 8 bandage.

Scapula. somewhat triangular.
Externally convex & termed the
Dorsum, from which arises a spine
which is somewhat hollow & flat-
ted above, named the Crista, to wh.
several Muscles are attached.
It is divided, into Superior & In-

ferior Costa, & Basis, &c. — The spine
 terminates in the Acromion, wh.
 has a smooth internal edge for
 the reception of the clavicle. The
 head of the scapula, is formed in-
 to a Glenoid cavity for the reception
 of the head of the Os Humeri; just
 above it is the Coracoid process, wh.
 is very important, having attached
 to it, 1 head of the Biceps; Coraco brach-
 ialis &c. &c. — Sometimes this is fractured.
 tho this mostly happens at the
 Cervix scapulae; — To determine
 if it be fracture or dislocation (the
 symptoms being the same,) We must
 feel this process by bending the Arm
 & pressing into the hollow; if it
 yields, it is fracture &c. — You
 must press the head of the Humerus
 up by keeping the Arm in a sling
 covering the Elbow with it & keeping

Feb. 18. 78. down the shoulder, with the reflex-
ed lachryline bandage. — The in-
ferior angle of the scapula is made
smooth, by the action of the latif-
simus Dorsi. — Matter is sometimes
formed behind this bone; it is
then recommended to trephine up-
on it. — & — — —

Feb. 14th. W. Crange considered the
Os humeri. — Has a body, upper
& lower Extremities; Its head is fitted
for connection with the scapula, &
is on one side, in respect to its body.
The internal condyle of its lower
Extremity may serve as a guide to
find it &c. — The upper part of its
body, has several smooth surfaces
expressive of the attachment of
Muscles, as is also the body itself.
The pectoral Muscle is attached

to an outer ridge, which is on the
body, & the latissimus dorsi to an
inner one. The Coraco-brachialis
arises from the Coracoid process, &
attached to this bone, somewhat
flattened posteriorly, having a
deep fossa, & also at its internal
part, into which the Olecranon
& Coronoid process of the Ulna play.
Tends in its ex- & internal condyle,
the latter of which projects in-
wards considerably, & is often fractu-
red without detriment to the joint.
The external condyle is much
wounded, & on it the Radius plays,
it is much less than the internal
one which is always fractured
in a Dislocation ^{of the forearm} inwards, but a
Dislocation may happen out-
wards, without fracture. Ex-
tension of the fore Arm, is sufficient

275. 80. to reduce it. Dislocations of the
Humerus may take place
downwards, backwards or forwards
but not upwards, without frac-
ture of the processes of the
Scapula. L. R. H. ---
Fore Arm. Consists of 2 bones, Radi-
us & Ulna. - Radius. - Is ra-
ther convex externally. &c. - pretty
regular. It is in part hollowed
for connection with the tuberc-
cle of the humerus, & laterally
to the semilunar cavity of the
Ulna. - Its Neck is surrounded
by a ligament, fastening it
to the Ulna. - Internally, below
the neck, is a tubercle, to which
is attached the tendon of the
Pronator. - below this it becomes
broader, ending in a kind of ridge
to which the interosseous liga-

ment is attached, going to a simi- 81.
lar ridge in the Ulna. In the
middle is a rough surface, to wh.
the pronator teres is attached
from the internal Condyle of the
Humerus, which Muscle, without
care is taken, will be divided in
opening the Arm. It ends in
a semilunar Notch in wh. the Ulna
plays laterally, fits and has a
Cavity for the reception of the Os
Scaphoideum. — The
pronator quadratus arises from this
Ulna. Is the longest of these bones.
The internal one, the Radius moves
round this in pronation & supina-
tion, it being fixed. — It has an
articular cavity bounded by the
Olecranon & Coronoid process. The
former has inferiorly, a triangular
rough surface, expressive of the

82. place on which we always lean.
When the Olecranon is fractured,
we must keep the Arm extended
by a small splint, from the Hu-
merus to the fore Arm; & Inflamm-
ation, must by all means be
avoided. At a fortnight, end
or before, we must begin to move
the Arm gently &c. The
Triceps Muscle is attached to this
bone, at the Olecranon. The Bra-
chialis internus to the coronoid
process. On its outside is a se-
mi lunar fœsis in wh. the Radi-
us plays: A little lower is the
ridge to which the Ligament is
fixed surrounding the Radius, its
outer side has a ridge to wh.
the interosseous Ligament is
attached, Its lower part is

round &c. --- It ends in the 83. 3.

~~Sensillum~~ Stiloid process.

Both are sometimes fractured,
A narrow compress placed before
behind is sufficient, over wh.
a splint may be placed.

Carpus. - Consists of 8 bones,
Divided into upper & lower pha-
langes, the upper consists of
the Os scaphoides, Lunare, Cy-
neiforme, Pisiforme, the low-
er of Os Trapezium, Trapezoi-
des, magnum & trapeiforme.

They are all of a Wedge like
figure. Considerable Motion
between the 2 phalanges is
allowed of. - All the bones com-
municate one with the other,
so that Disease of one, affects
all. They also communicate,

Feb. 84 with the Metacarpal bones, wh.
should not be taken away at their
junction with the carpus. &c.
Metacarpus. Consists of 4 bones,
the Thumb ^{not} having one. It may
therefore be removed from the
Carpus, without Detriment.
Fingers. 5 in. N^o. each consisting
of 3 bones. The Thumb has the
strongest bones, as it counter-
acts, all the fingers; we should
retain as much as possible of
it in Amputation. &c.

Feb. 15th. M^r. Blizard considered
the bones of the pelvis: composed
of the sacrum, Coccyx, & Os pubis
minata, wh. is divided into
Ilium, Ischium & Pubis. Their
situation of the pelvis is very
inclined, The upper part of

3.

The Ilium forms a considerable part of the Abdominal parietes. These 3 bones are complicated into a single one in Adults. The Ilium, is rounded above wh. part is termed its Crista, which ends, before in, Anterior sup. Spin. process; & behind in posterior Spin. process; where it joins its fellow has the term of symphysis applied to it; it has a Ramus & an Angle &c. &c. — Ischium has a process termed its spine &c. which is turned more outwards in females than Males; Its inferior part, is rough, termed its tuberosity. Its upper part forms the greatest share of the Acetabulum, at the bottom of wh. is the fossa for the Synovial gland &c. It has a large Notch complicated in the recent subject, into a foramen, by Ligaments.

28. sk sacrum; consists of 5 bones in the
fetus, which in Adults, are
formed into ones. - It is a wedge
like bone, & situated between
the 2 Iliac behind. It has the
Coccyx at its extremity, divided
into 2 or 3 bones, the 1st of which
has 2 processes standing up,
from wh. Ligaments go to the
sacrum. - The Pubis is
formed into an arch by the junc-
tion of the 2, larger in Women
than Men. - The Axis of the pel-
vis & Abdomen are different. -
To the Crista of the Ilium, all the
Abdominal Muscles are attached.
from its post. spine Ligaments
go to the sacrum &c. - The sac-
torius Muscle arises from the
ant. sup. spine; behind the

ant. inf. spine, is a hollow, over ^{3.}
wh. the psoas mag: & Iliacus
internus pass; A little lower,
the place where the External
Iliac Artery passes. — Ponsart,
or Fallopius' Ligament goes
from this bone to the angle
of the pubis, &c. —
Acetabulum. — Is form'd by
the junction of these 3 bones,
& is the socket, in wh. the head
of the femur plays. — &c. —

Feb: 16.th Mr Orange, considered
the Os femoris; having a body & an
upper & lower extremity. Its upper
part is form'd into a head laterally,
having a contracted part, termed its
Neck, to one side of which its body
ends in the Trochanter major,
& more internally downwards, is

88 the Trochanter minor. Below the
Trochanter major is rough line
towh. the *gluteus medius*, is attach-
ed; & at its posterior part is the
linea aspera. Fractures of the
Neck sometimes happen. We may
always tell the situation of
the head by its being anterior.
It is one side of the internal con-
dyles. Its Head has a rough sur-
face at its extremity towh. the
the *Ligamentum transversum*, is fixed.
It terminates in the ex^l-ter-nal
condyles, which are framed for a
Ginglymoid & Enarthrosis Artic-
ulation. Its anterior part is grooved
receiving the patella. Inflamm-
ation & fracture of the Condyles
are very dangerous to the joint.
Leg. Consists of the Tibia & Fibula.
Tibia. — somewhat triangular,
having an external, internal,
& posterior surface. The inter-
nal, is, what we term, shin, &

may be got at by a simple Incision, wh. the others cannot be. Its anterior edge is termed its spine. Externally below the head, is the smooth surface to which the fibula is fixed. The Ligaments of the patella are fixed to a protuberance it has at its anterior part. Its inferior internal surface, forms the Malleolus internus, which is somewhat rounded by the tendons of some Muscles; it is sometimes fractured. Fibula. - It very slender. Its lower extremity forms the Malleolus externus. fracture of its extremity may happen without injury to the joint. We are directed in Amputation to stand on the inside, as we shall fix our saw on both bones at once. -

Poot. Consists of Tarsus, Metatarsus & Toes. The Tarsus consists of 7 bones, viz, Astragalus, Calcis, & Navicularis, forming the

27. 90. upper Phalanx. Os Cuboides,
cuneiforme externum, medium
internum, the lower phalanx
Astragalus, is the upmost of
these bones, and is articulated
above to the Tibia & Fibula; below
to the Os Calcis, & before to the Os
Naviculare. Os Calcis, is the
largest of these bones & to it the
Tendo Achillis is fix'd.

Metatarsus - Consists of 5 bones,
larger in every respect than the
Metacarpal bones; The great Toe
has a metatarsal bone, The ends
of the Metatarsus are connected
with the tarsus, & the same Obser-
vation, will be good here, wh. was
made respecting the Carpus. &

Toes - The great Toe has but 2 bones
the others, each 3. & & - - -

Patella, is of heart shape & &
fractures of it longitudinally &
transversely sometimes happen. &

N^o of bones in the human body. 91.

Those proper to the head.

Skull. Bones of the internal Ear	16.
Maxilla superior. 13. inferior. 1.	14.
Teeth in both Jaws 16	32.

Proper to the Trunk.

Vertebra. 24. Costa. 24. Sternum. 1.	49.
Ossa Innominata. 2. Sacrum. 1.	~ 3.
Coccyx. 3.	~ 3.

Superior Extremities.

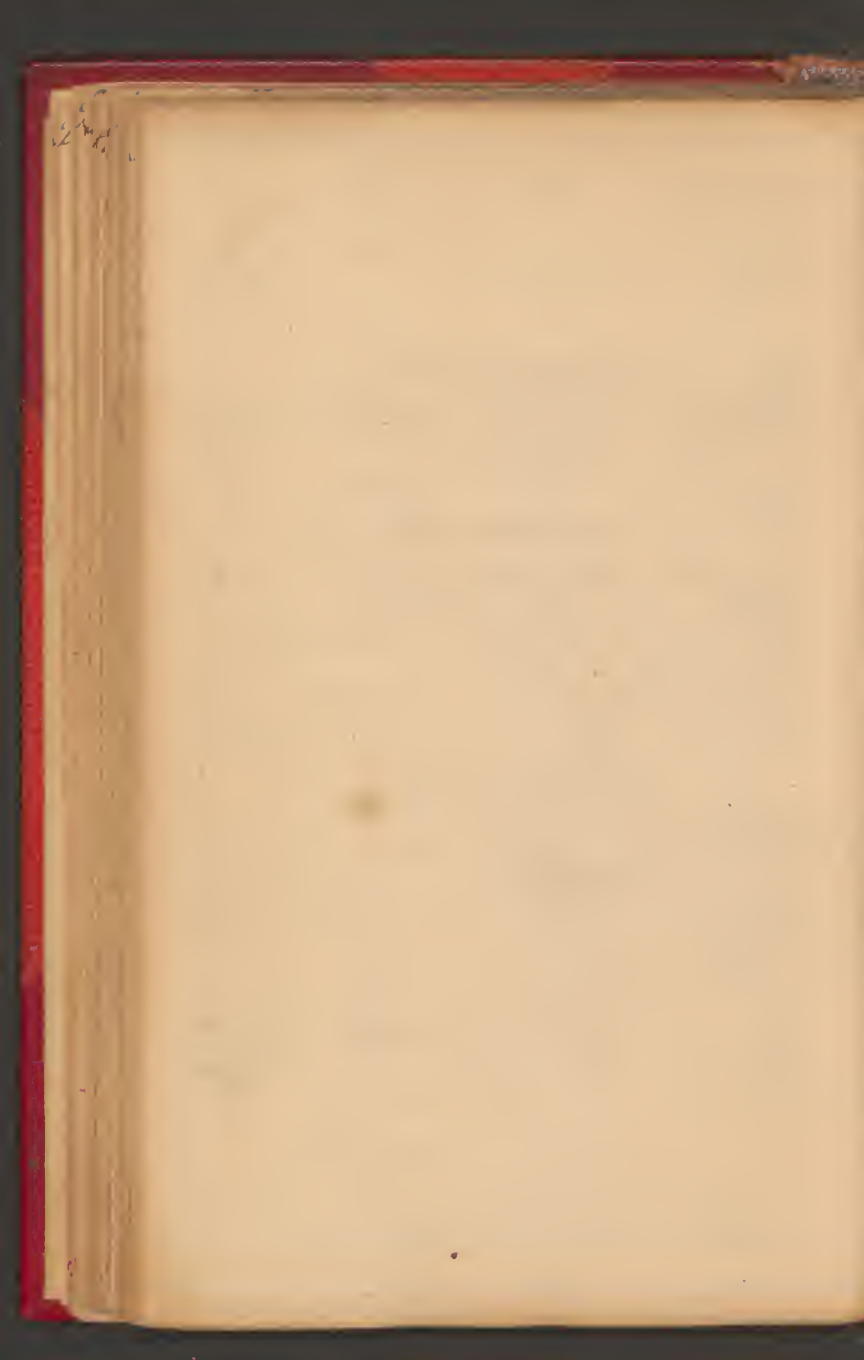
Clavicula. 2. Scapula. 2.	~ 4.
Ossa Humeri 2. Ulna 2. Radius. 2.	~ 6.
Carpus of each hand 8.	16.
Metacarpus 4	~ 8.
Finger bones 15	30.

Inferior Extremities.

Ossa Femoris. 2. Tibia. 2.	~ 4.
Fibula 2. Patella 2.	~ 4.
Tarsus of each foot 7	14.
Metatarsus 5.	10.
Toes. 14.	28.

Total.

241



Of the Muscles.

93

Feb. 18th. Mr. Orange began the
consideration of the various Mus-
cles of the body; Commencing with
those of the fore part of the
Abdomen, which consist of 3
^{layers}
~~the~~ I may be reckoned as digestive.
The 1st is the externus obliquus.
arising ^{by} fleshy digitations, from
the inferior edges of the 8 inf. ribs
meeting the digitations of the
Serratus major anticus. Its
fibres pass obliquely downwards
being inserted into the Crest of
the Ilium; It becomes tendinous
at different distances, forming
the Linea semitendinea; It joins
its fellow in the Linea alba.
which is, formed by the tendinous
fibres of the 3 layers, interlacing.

2nd 94 from the Xiphoid Cartilage to
the pubis. — The tendinous
fibres are bent downwards,
from the ant: sup: spine of
the Ilium to the Pubis, for-
ming Ponsart's Ligament;
under wh. femoral hernia
take place, in wh. are seat-
ed the Rings, through which
the spermatic Chord passes in
Males, the round Ligament of
the Uterus in females, form'd
by a separation of inferior
fibres of wh. it is composed from
the superior, wh. last go to the
Symphysis pubis; the inferior
to the angle; so that the Ring
is triangular. Therefore between
the Angle & Symphysis a Truss
should be applied in a hernia.

The peritoneum is never ruptured, but descends with the Intestines, forming the Hernial sac. — The Ring is prevented extending, by cross Ligaments &c. — Those Hernia wh. pass through the Ring, as Umbilical, &c. should be reduced in the direction of the ring, upwards & outwards; but femoral Hernia upwards & inwards, towards the Linea alba. — — —

Beneath this Muscle is seated the Internus obliquus: whose fibres run in a contrary direction to the last; It arises from the Cista of the Uterus &c. attached to the 7 inf. Ribs, Xiphoid Cartilage, Linea alba. from its inferior fibres the Cremaster Muscle arises

27. 90. which is lost in the Tunica Vagi-
nalis Testis. &c. — — —

Below this is the Transversalis,
etc. arises tendinous from the
transverse processes of the Ver-
tebrae Lumborum, fleshy
from the Crista of the Ilium, &c.
is inserted into the 7 inf. ribs,
xiphoid cartilage & Linea alba. —

Pecti. arises tendinous from
the Ligament, connecting the
Osae pubis. is inserted into
the Cartilages of the 3 inf. true
ribs. — It is intersected by tendon
in different parts — It is placed
in a sheath formed by the tendons
of the Abdominal Muscles,
that of the obliquus internus
dividing into 2 parts which surround

this R. — The muscles are 97 B.
bounded by the Linea semilunaris,
Alba. — The Umbilicus or Navel,
is seated about the middle of
the Linea alba, at wh. Hernia
sometimes take place, termed
Omphalos &c. —

The Uses of these Abdominal
Muscles, are 3 fold viz, as Flexors,
Respiratory & Expulsive powers.
Flexors. When they act together
they antagonise those placed be-
hind. &c. — They turn the body
to one side. The Ex. Oblique turns
the body to the contrary side; & the
In: Oblique to the same side &c. —
In wounds of the Abdomen, these
should be relaxed as much as
possible. — Also in Contusions. —

278. 98. Respiratory powers. They counteract the intercostal muscles, pulling down the ribs. Springing the Contents of the Abdomen up against the Diaphragm: they lessen the Cavity of the Thorax, thus forcing the Air, out of the Lungs: they are voluntary & involuntary, acting when asleep. Inflammation &c. of these causes Difficulty of breathing &c. &c. — Expulsive powers. — They expel the feces, Urine, &c. In females the fetus. — In tapping, the mid space, between the ant. sub: spine of the 11th, & Umbilicus, is proper, wh. is just in the linea semilunaris. &c. — Latissimus Colli. or platysma Myoides — Arises by slender fibres, from the Sternum, Acro-

mion, Pectoralis & Deltoid Muscles, 99.
is lost in the Muscles of the
face, &c. &c. - The external Jugular
Vein runs under this being
Pectoralis - Arises from the sternal
extremity of the Clavicle, Sternum,
& 5th, 6th, & 7th Ribs, is inserted into
the upper, inner part, of the Hu-
merus, it is a flexor & adductor of
the Arm. - In Climbing, it
draws up the Trunk to the Extre-
mities. - Upon this is seated
the Mamma, or Breast, in the
Amputation of wh. we should
keep the Arm extended, thereby
stretching the Muscle, &c. but the
operation finished, we must
place the Arm to the side, the
Hand laying over the Thorax &c.

278 100. Feb. 19th. M. Orange, considered
the Muscles seated on the
anterior part of the Neck, &
first of the sterno (leido) Mas-
toideus; wh. arises tendinous
from the Sternum; & fleshy
from the Clavicle, & is attach-
ed to the Mastoid process of
the temporal bone. When
both these Muscles act toge-
ther, they bend the Head, but
when separate, ^{turn it} to the oppo-
site side; Wry Neck, is the
Disease of these Muscles, ei-
ther an increased power of
one; or a deminution. — If it
is from the first Cause, the divi-
sion of the muscle, is necessa-
ry, performed with the probe-

Plasor & The Muscles of 101.
the fore part of the neck are
more useful as physiologists,
than surgeons. They are all
subservient to the performance
of Deglutition. The pha-
rynix is a large bag seated
behind the Larynx, consisting
of Cartilages & Os Hyoides;
Their Names are, Thyroid,
Cricoid, 2 Aretinoid, & Epiglottis.
The Os Hyoides, has a basis,
& 2 cornu, wh. are attached to
the Thyroid Cartilage. Those
Muscles, wh. draw up the Os
Hyoides &c. are attached to the
temporal bones, under jaw,
going to the Os Hyoides. The
1st pair wh. we shall consider, are

102. The Digastric Muscles Which arise on each side. the symphysis of the Chin, it has 2 fleshy bellies, the posterior of which arises from the sulcus at the bottom of the Mastoid process; its anterior to the Os Hyoides; and it draws up, when the inf. max: bone is shut. . . .

The Mylo Hyoides lies beneath this. . . & digastric muscle having a very extensive origin, from the symphysis of the Chin to the Angle & . . . it is inserted into the basis of the Os Hyoides. The Genio Hyoides, lies beneath this, attached to the basis also. The Stylo Hyoides, arises from

The Styloid process, passing through the tendon of the digastric Muscle, it is fixed to the Cornu of the Os hyoides. These are Elevators of the Larynx & Os hyoides. ~ ~ ~

The Depressors are, first, The sterno-hyoides, coming from the inside the sternum, going straight to the anterior part of the Os hyoides; they are cut through in the Operation of Tracheotomy. ~ ~ ~

The sterno-thyroidei, are beneath these, coming from the inside the sternum, to the Thyroid Cartilage. — The thyro-hyoides, from the Thyroid Cartilage to the Os hyoides. — —

104. Crico-Thyroides. — arises from the
Cricoid Cartilage, & is attached to
the Thyroid, &c. —

Omo-Hyoides. — Arises from
the (Larynx), & is attached to the
Os Hyoides. — Beneath these
Muscles, is seated the Thyroid
Gland, wh. is frequently enlarg-
ed, constituting a Goitre.
Neck. This produces difficulty
of breathing, by pressing on
the Aspera Arteria, Difficulty
of swallowing, by preventing
the action of these Muscles.

Serratus major anterior. — Aris-
es from the basis of the scapu-
la; & is attached to the 8 superior
Ribs; It draws the scapula for-
wards &c. —

Serratus minor anterior. — spec-

toralis minor, arises from the ^{115.} 3rd 4th & 5th Ribs. Goes to the
Coracoid process. It brings the
Scapula downwards & forwards,
on the ribs, & it draws them
up, & may therefore be con-
sidered as accessory to Respi-
ration. & ———

The Subclavius - Arises from
the Clavicle, Goes to the 1st
Rib, wh. it helps to fix, &
may therefore be considered
as a Ligament &c. ———

106. Feb 21st M^r Orange considered
The Fronto-occipitalis, Muscle; It
arises from the transverse ridge of
the Occiput, laterally to the mas-
toid process. It is tendinous over
the cranium &c. It is fleshy on
the Zygomatic & is inserted into
the Orbicularis palpebrarum.
wh. it draws up. The 5th branch
of 5th p^r of Nerves, coming out
at the Supra Orbital foramen,
supplies the frontal portion.
It is connected by short cellular
substance to the hairy scalp, &
by long, to the pericranium;
between both wh. Matter may
be formed, the sooner dischar-
ged the better. If the Nerve is
in a state of paralysis, or cut,

2. the Eyelid cannot support 107.
itself. - A. H. H. - - - - -

Atollens, Retrahenr. Arcum. Anterior
Auris A. H. - - - - -

Temporal Muscle. Commences at
the External ang: process, the
semicircular ridge of the lateral
part of the parietal bone &c
&c inserted into the Coronoid
process of the lower Jaw, wh.
it pulls upwards & a little back-
wards &c. - It is surrounded by
a fascia formed by the reflection of
the external layer of the peri-
cranium from the internal &c
Matter may be found below it,
& is so deceptive, that it is often
taken for fracture with depres-
sion - - - - -

108. Masseter. - Arises from the
Jugum, formed by the temporal
& Malar bones. Is inserted into
the Ramus & Angle of the low-
er Jaw. It is composed of an
ex- & in-ternal portion, the
fibres of the former going back-
wards, of the latter, forward.
This pulls the Jaw upward,
backwards & forwards.

Muscles of the face. - Eyelids.
serve as Veils, against the light,
dust &c. they sweep the tears
over the Eye, & convey them
away. They perform their
functions by means of the
Orbicularis palpebrarum.
wh. surrounds the Orbit, &

is inserted into the Nasal process¹⁰⁹
of the sup: Max: bone. Its tendon
is divided in the Operation of Fistu-
la lacrymalis ~ ~ ~
Elevators of the Lip ~ Levator Labii
superioris proprius, Alog: Nari.
Arises, from the sup: max: bone
just above the infra orbital fora-
men, & from its Nasal process; &
is inserted into the Orbicularis
Oris, & the Ala Nari; It raises
the upper Lip & depresses the
Nose ~ ~ ~

Levator Anguli Oris. ~ Arises from
the hollow of the sup: max: bone &
is inserted into the Angle of the Mouth.
It draws the Corner of the Mouth
upward, as, in smiling. ~ ~

110. Zygomaticus, or, Distortor Anguli
Oris. — Arises from the Zygomatic
process, & is inserted into
the Angle of the Mouth wh. it
draws up, in: "Grinning horribly a
ghastly smile!" — — — These Muscles
elevate the upper Lip & Angles &c.
It has 2 depressors. viz. — Depressor
labii superioris proprius, Allog. Nas.
wh. arises from the upper Jaw, & is
inserted into the upper Lip, & Allog. Nas.
both wh. it draws downwards & backwards.
Depressor Anguli Oris. — Arises
from the lower edge of the Maxilla
inf; & is inserted into the Angle of
the Mouth wh. it pulls downwards.
Buccinator. Arises from the Ramus
of the inf: max: bone; & is inserted
into the Angle of the Mouth, wh.
it draws back & contracts. —

Elevator Menti. — Arises on the ^{III.} outside the alveolar processes of the inf: max: bone, & is inserted into the under lip & skin of the chin.
Oricularis Oris. — Is formed by the fibres of almost all the Muscles of the Mouth decussating each other, & surrounding the Mouth like a Sphincter. It shuts the Mouth & counteracts all the Muscles, wh. form it &c. —

Feb: 22nd M^r Blizard considered the Diaphragm. — wh. forms a complete Septum between the Thorax & Abdomen; ^{It is attached} ~~arises from~~ to the xiphoid Cartilage, from the Cartilage of the last true & all the false ribs, & to the 3rd, 4th & 5th Lumbar Vertebrae, arising from a ~~wide~~ tenacious Centre, from wh.

112. The fibres diverge. The tendon is
semilunar, (has a hole on its
right side, through wh. the
ascending Vena cava passes. —
The fleshy part terminates
in the Crura, & the fibres of
wh. decussate leaving a hole
through wh. the Aorta passes,
Above this is another hole
which gives passage to the Gula.
This Muscle, is the principal
Agent in Respiration &c. —

Feb. 23^d. M^r. Orange considered the Trapezius, wh. with the Latissimus Dorsi, almost cover the whole back. It arises from the protuberance in the Os ispius, the 2 last spinous processes of the Cervical Vertebrae, & all of those of the back. It is inserted into the posterior part of the ~~scapula~~ ^{Clavicle}, & the spine of the scapulae. The direction of its fibres being 3 fold, will act accordingly. Its straight ones draw the scapula directly backwards & c. It also draws the Head backwards, antagonizing the Sternoc. Mastoideus. — The Ligamentum Nuchae is the attachment it has with its fellow at the Nape of the Neck. As there are no ^{muscular} fibres here, Blisters, & c. are to be applied & c. —

114. Latissimus dorsi. - Arises from the
12th pro: of the Vertebrae of the
loins, & Os sacrum, several of the
dorsal, from the Extremities of
the 3rd & inf: Ribs, & from the
Crista & spine of the Ilium, & is in-
serted into the inner edge of the
groove in the Humerus. It pulls
the Arm backwards & downward, &c.
Dislocations of this Muscle takes
place sometimes, to reduce wh. the
Arm, must be brought to the body.
pressure, being made on the inf:
ang: of the scapula, when the Arm
must be brought quickly upward.
Rhomboideus. - situated between
the 2 last muscles, & is distinguish-
ed into major & minor, the latter
being superior &c. & taken together

arise from several of the spinous ^{115.}
processes of the Cervical & Dorsal
Vertebrae. It is attached to the basis
of the scapulae, wh. they draw
upward & backwards. —

Serratus sup: posterior. — Arises
from the spi: pro: of the 2 last Cervical,
& upper dorsal Vertebrae, is inser-
ted into the ribs, wh. it draws up,
is therefore an inspiratory, movt. —

It is antagonized by the Serratus
inf: posterior. wh. arises in common
with the tendon of the Latissimus
dorsi, is attached above to the ribs &c.

Splenius capitis. — Arises from the
Lig: Nuchae, & spi: pro: of 3 last Cervi-
cal Vertebrae & is inserted into the
Occiput; pulls the head backwards.

Splenius Colli. — Arises from the 3rd & 4th
of the back &c. — inserted into ^{vertebrae} sub: trans: —

116. Complexus. Arises by digitations from the trans: proc: of the 7th Cervical, & 1st dorsal Vertebrae. is attached to the Occiput, wh. it draws backward &c. —

Trachelo-Mastorideus. — Arises from the trans: proc: of some of the lower cervical, & up to dorsal Vertebrae & is inserted into the Mastoid process, assisting the Complexus &c. —

Musculus Patientia. — Arises from the sup: ang: of the scapula. It is inserted into the trans: proc: of 3 or 4. Cervical Vertebrae. It raises up the scapula &c. —

The principal flexors of the Thigh, lie in the cavity of the Abdomen.

Psoas. — Arises from the transverse proc: Bodies of the Lumbar Verte-

bre, going over the brim of the ¹¹⁷.
pelvis, is inserted into the
Trochanter minor of the Femur.
wh. it bends forwards. &c. &c. —

There is sometimes a Psoas
parvus. — In inserted into the
brim of the pelvis, arising from
the 2 upper Lumbar Vertebrae,
assists the former in bending
the Loins forwards &c. &c. —

Iliacus Internus. — Arises from
the trans: pro. of the last Lumbar
Vertebra &c. &c. — Joining the
Psoas magnus, becomes tendinous,
& is inserted into the Trochanter
minor along with it. — —

118. Feb. 24th. M^r. Blyard, considered
the Muscles of the spine, which
he said should all be taken toge-
ther to understand their Uses.
Longissimus Dorsi. Arises from
the Sacrum, & 12th Spine of the
Lum. A. H. inserted into the Verte-
bra of the back. Rib 4th by small
tendon etc. It keeps the body erect.
Sacro-Lumbalis. Arises, in com-
mon with the last: inserted into
the Rib, &c. & has the small Mus-
culi ad sacrolumbalem Accessorii
attached to it. &c. From the upper
part of this Muscle, the Cervicalis
descendens, goes, to be attached to
several trans: pro: of Cervical Vertebrae,
wh. turns the head backwards &
to one side &c. &c.
Semispinalis Colli & Dorsi Arise

trans: pro: of the
from the Vertebrae of the back by 119.
tendons inserted into the spi: pro:
of cervical Vertebrae, except 1st & last. &
Multifidus Spinae Arises from the
Sacrum. Ilium &c. inserted into
spi: pro: of Lum.: dors: & cer: Vertebrae
Rectus major Capitis posterior, & minor.
Obliquus superior, & inferior. — &c.
Sca Leni. — Arise from trans: pro:
of cervical Vertebrae, inserted into
1st & 2nd Ribs. They bend the Neck,
elevate the Ribs &c. —

Intercostales. — 2 layers, ex & internal. —
External Arise from the Spine &c. & going
downwards & forwards lose themselves
at the Cartilages of the Ribs &c. — The
Internal commence at the Sternum & go down-
wards & backwards & stop before they arrive
at the Spine. These draw the Ribs upwards &c.

Triangularis Sterni. Arises from the Sternum & intermingle
its fibres so upwards & are fixed in the Cartilages of 3rd & 4th Ribs &c.
when it contracts it contracts the cavity of the Thorax &c.

120. Feb. 25th. W^m Orange began the Consideration of the Muscles of superior Extremities &c. — Deltoides. — Arises from the (Clavicle, Acromion, & lower margin of the spine of the scapula, &c. is inserted into the outer part of the Humerus, near its middle); It pulls the arm, outwards upwards, & backwards & forwards &c. — Supraspinatus. — Arises from the base of the scapula above the spine, from the spine itself & sup. Costa &c. is inserted into the protuberance on the head of the humerus &c. It raises the arm up &c. — — — Infraspinatus. arises from the base of the scapula below the spine, & is also inserted as above. It rotates the humerus outwards, &c. — Beneath it, from the hollow of the scapula, arises the Teres minor. is inserted, rather lower &c. than the 2 former &c. It rotates

the humerus outwards &c. — — — The ^{121.}

Subscapularis. — arises from the upper
all the internal hollow of the scapula.
is attached to one of the smooth surfaces
on the head of the humerus; It rotates
the humerus inwards &c. — — The

Teres major. — arises from the infer:
angle of the scapula. — Its tendon is
attached with that of the latiss: dorsi,
is inserted along with it. — It rotates
the humerus inwards, & is also a flexor &c.

Coraco-brachialis. — Is an adductor &c.

Varies in common from the coracoid
process, with the short head of the Biceps.
is inserted about the middle of the
internal part of the humerus &c. &c. —

The Fore Arm, is capable of flexion, &
Extension, &c. &c. It has 2 flexors, viz.

Biceps, & Brachialis internus. &c. &c. —

Biceps. Which in our subject, happened
to be a Triceps. — Arises, by its short

122. head from the coracoid process. The
Tendon of the long head, passes along
the groove, through the articulation
from the upper edge of the glenoid
cavity; these uniting about the middle
of the arm, are inserted into the
Tubercle on the upper end of the
Radius &c. It is a flexor & supinator
of the fore-arm & also an adductor
of the Humerus &c. — From the bending
of the Elbow, at the lateral internal
part of the forearm &c. the tendon of
this muscle sends off an aponeurosis,
joining another sent off by the Triceps
wh. cover the Muscles &c. & afford attach-
ment to some muscular fibres under
it the Arteries Deep seated Nerves pass &c.
Triceps Extensor Cubiti — At the back of
the arm, arises, by 3 heads; from inf. costa
of the Scapula; by the long head &c. & from
the humerus, by the 2 others; these

join & their Tendon is fixed to the Ole¹²³
cranon &c. This is a powerful Ex-
tensor of the fore arm &c. —

Brachialis internus. Arises from the
Humerus &c. is inserted into the pro-
noid pro: of the Ulna. This flexes the Cubit.

Feb: 26th. Mr Grange considered the
Muscles of the Cubit. — From the
internal condyle of the humerus, the
Pronator teres arises: is inserted into
the middle posterior part of the Radius
wh. it rolls inwards. Pronator quad-
ratus, arises from the lower inner part
of the Ulna, inserted into the lower an-
terior part of the ^{Radius} ~~Ulna~~ wh. it rolls
inwards &c. — The hand has 2 su-
pinators — Supinator Radii longus, Ari-
ses from the Humerus &c. inserted into
the inferior extremity of the Radius.
wh. it rolls outwards &c. — Supinator
radii brevis — Arises from external Condyle

224 inserted into Tubercle &c. of the Radius,
wh. it rolls outwards. &c. —

Palmaris Longus — Arises from internal
Condyle, inserted into Lig: Carpi Annu-
lare &c. &c. It bends the hand &c. —

Flexor Carpi Ulnaris — Arises from inter-
nal Condyle of Humerus; inserted into
Os pisiforme &c. bends the Arm. —

Flexor Carpi Radialis. — Arises from the
internal Condyle &c. inserted into Os Tra-
pezium &c. — It also bends the Arm. &c.

Extensor Carpi radialis longior. Arises
above the external Condyle &c. inserted
into metacarpal bone of 4th finger &c.

Extensor Carpi radialis brevior. — Arises
from external Condyle &c. inserted into
metacarpal bone of middle finger &c. —

Extensor Carpi Ulnaris. — Arises from
ext: Condyle &c. inserted into
metacarpal bone of little finger &c. —

These 3. last. extend the Arm. &c. —

The lateral motion of the Carpus per- 125.
formed by the flexors & Extensors of either
side, acting together. — All the
fingers have a Common Extensor &c..

Extensor Digitorum Communis. — Arises
from external Condyle &c. & splits into
4 tendons, before it passes under the
Lig. annulare: & is inserted into the
bones of all the fingers. posteriorly. —

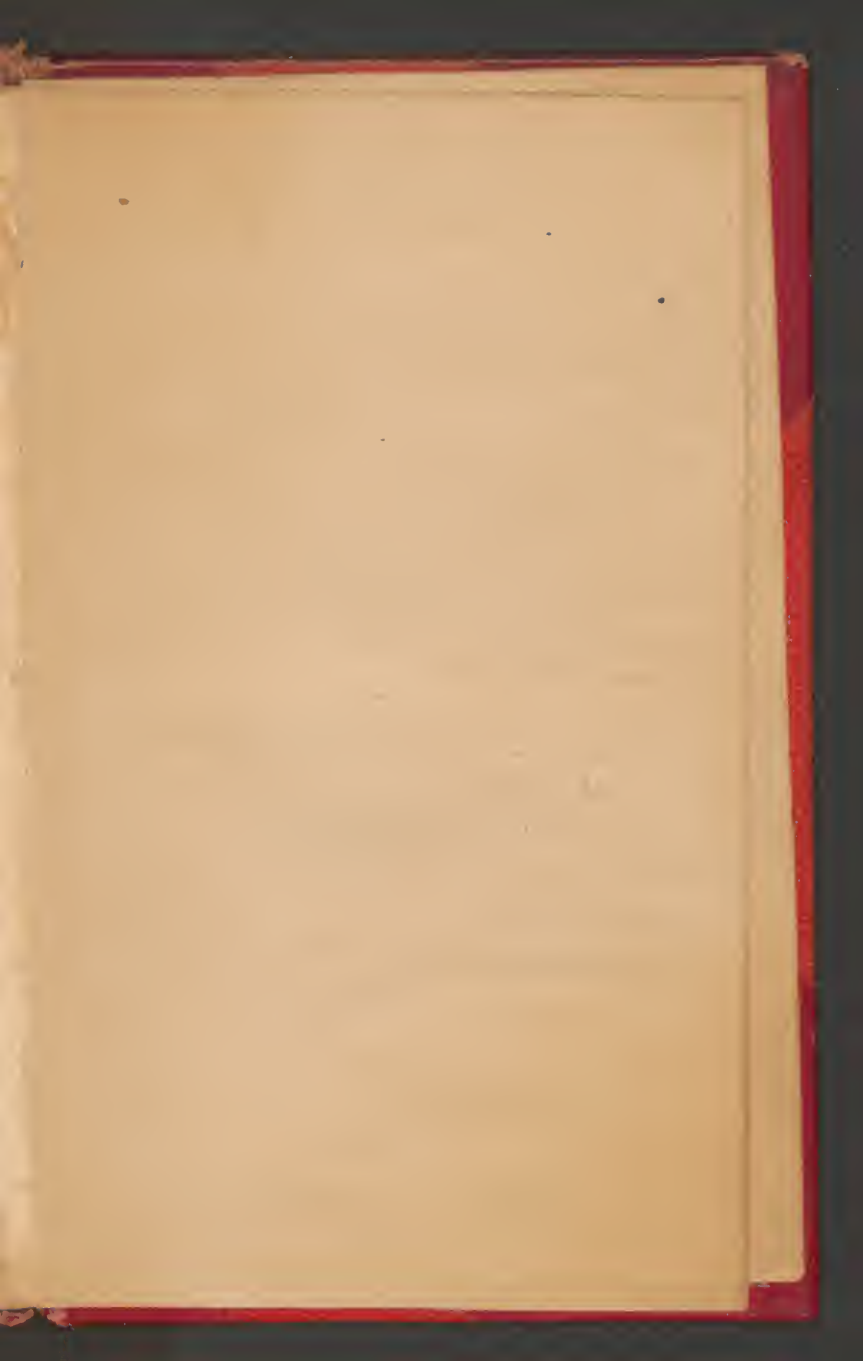
Indicator. — Arises from the Ulna &c.
is inserted into 1st bone of fore finger.

Flexor Sublimis. — Arises from the Ulna
&c. — inserted into 2nd bone of each finger &c.

Flexor profundus. — Arises from Ulna &c.
inserted into last bone of each finger &c.
this passes through the last &c. —

Flexor longus pollicis, & Brevis. — the last
arises from carpal Lig: inserted into 1st
bone of the thumb &c. — The former
from the Radius, goes to the 1st bone &c. —
For the several little muscles of the hand &c. see Jones
winclove &c. —

126. Feb. 28th. Mr. Blizard considered
the muscles of the Anus &c. &c.
Gave some hints concerning the
introduction of a catheter, Sound
&c. into the Bladder, & what the
consequence of not depressing the
handle of the gorget in Lithotomy,
would be &c. &c.



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Mod. Hist.
MS.
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